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MAN:

PALÆOLITHIC, NEOLITHIC,

AND

SEVERAL OTHER RACES,

NOT INCONSISTENT WITH SCRIPTURE.

BY

NEMO.

DUBLIN:
HODGES, FOSTER, AND CO., GRAFTON-STREET.
1876.

PREFACE.

THE creations of pre-Adamite man were not unrevealed. They will be found distinctly stated in the first chapter of Genesis; their dominion allotted to them, and their authority prescribed.

In the second chapter will be found a fuller description of the creation of our Adam, of the territory granted to him, and his occupation dictated. To those who doubt the accuracy of the revelation from an apparent though unreal discordance, (and some such there are,) the following pages are affectionately dedicated by

THE AUTHOR.

CHAPTER I.

PRELIMINARY.

"And spreadest out the heavens like a curtain."—PSALM civ. 2.

UNTIL the recent discoveries made by geological research (even within the present century) the belief was almost universal, that the earth and "all that is therein" was created in six of our days, and that all mankind were descended from Adam and Eve.

Man of himself could have known nothing of the origin of this world or of his own creation.

The Almighty was pleased to shadow forth a slight outline of the early stages of the earth, of its gradual progress from the time of its being "without form, and void," to the time of its being prepared for the reception of animal life, and, ultimately, for the support of man. It is manifest that this knowledge could only have been attained through Divine revelation, in whatever manner such revelation may have been made.

The suggestion, approved of by several eminent men, seems reasonable and probable, namely, that six several stages of its development were passed before the mental eye of Moses, who made a record of the visions, as presented to him, and we

read the detail, in the first chapter of Genesis, in language most sublime in its comprehension and in simple grandeur; yet, as rendered in our Bible, it does not convey to us the full sublimity of the language of the Prophet in the original text—"In the beginning God created the heavens and the earth." In the beginning of what? Of Eternity? No! Eternity had no beginning. The sentence has been thus translated, "God created the heaven and the earth *in their beginning*." This translation opens to the mind an unlimited view of the extension of time and space toward infinity. Does this beginning relate only to this earth and its surrounding atmosphere as its heaven, or does it include the whole of our stellar system—were there many beginnings, or only one? Had Sirius, (that magnificent glittering orb, fifteen millions of miles in diameter, equal in bulk to four thousand eight hundred and sixty times that of our sun,* glowing in his effulgence, at the distance of eighty millions of millions of miles)—had that splendid star no separate beginning? Was this earth in existence when Sirius was created? When he sent forth his beams into infinity of space, was the earth where

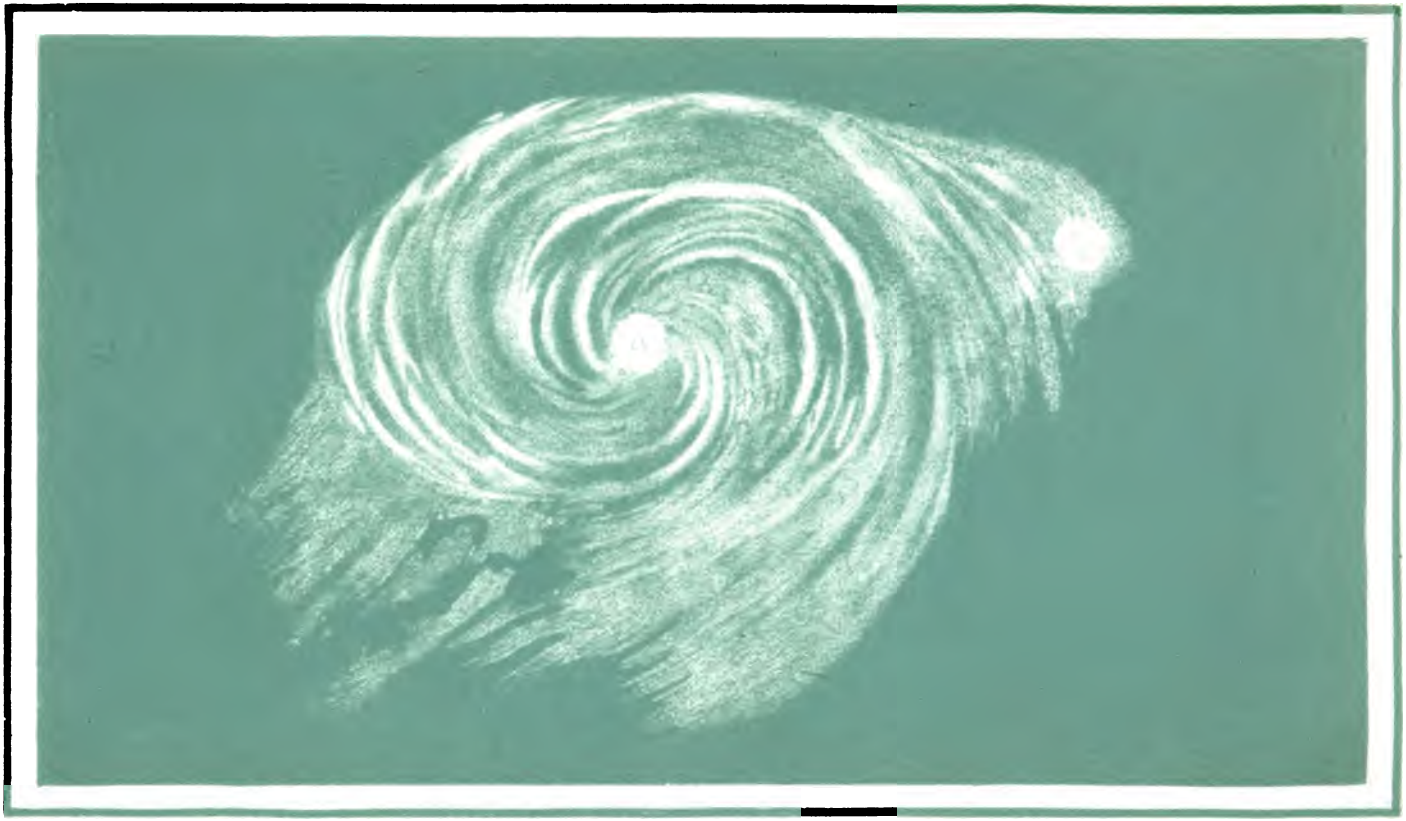
* Proctor calculates that Sirius is 2,200 times larger than our sun; but as he only appears in our most powerful telescopes as a mere point of blazing light, without any definable disk, there is evidently much in these difficult calculations that is conjectural and uncertain.

it is now to receive those rays, or did they pass on through empty space to other distant orbs? Had all the thousands of blazing suns which we see, and the millions we do not see, had they all but one beginning? Were they all made at the same time with our earth? Throughout all eternity, were the heavens void until the creation of this earth? Or was there not an unremitting continuance of creations proceeding everywhere, just as on this world there was a continuance of creative power unceasing until all its multiplied and innumerable productions were complete? Was the infinity of space unoccupied? Were formations of worlds uncreated in that great void, until that of our own was made, or was not there the same uniformity of progression in the creation of the heavenly bodies, as that developed in the production of minor objects, unceasingly arising on the face of this earth? Had those nebulous-looking masses, placed on the extreme borders of the limits of our present powers of vision, with all their millions of suns (diminished to our sight apparently to star dust) —had they no beginning of their own? Or were there separate commencements for each of those individual orbs? Could we transport our greatest telescope to the very outmost star of the most distant nebula, should we not behold from thence a continuation of seemingly interminable clusters of shining suns, of nebulæ looming in the far dis-

tance, and so on and on, and farther into infinity, until the mind becomes lost in conjecture. Had they each and all their own beginning? Looking at the representation of the spiral nebula, as seen by Lord Ross, through his great telescope, we can more fully comprehend the meaning of the quotation from the Psalmist, given at the opening of this chapter, "*And spreadest out the heavens like a curtain.*" Are they not being spread out before our eyes? There we see, as it were, stretching out into infinity, countless millions of suns, each with its own heaven or firmament.

Had the Psalmist any just appreciation of the comprehensiveness of his sublime conception? The view of such a mass of suns, stretching out across the heavens like "a curtain," must strike the mind of man with awe, at the vastness of the scene, yet it forms but a small portion of what has been of late revealed to us. Sir William Herschel had long since conjectured that our sun is travelling rapidly towards a point in the constellation of Hercules. It has been since ascertained that he is sweeping through space at the annual rate of one hundred and fifty thousand miles. Will even that rate enable him to reach that constellation? Never! Hercules is moving with all his millions of suns as rapidly as our great orb. All the suns we see glittering in our galaxy are tending onwards in their grand course, circling round some great irresistible unknown power which retains

NEBULA.



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them all in their appropriate places. What can that grand centre be? Unquestionably not an orb around which they revolve. A mass capable of exerting such attractive power should be in magnitude greater than all their combined numbers, nor is it likely such power should be conferred upon any unintelligent and lifeless mass. Can that vast power which draws the countless millions of suns from the remoteness of infinity to appear before his central throne, be aught else than that glorious and effulgent Supreme Being who wields and governs the mighty mass by His word and will. Our Saviour, who adapted his language to the low capacity of man, thought fit to conclude in that simple but beautiful prayer He taught us to utter daily, "For thine is the kingdom, *the power, and the glory for ever.*" Such knowledge of greatness and glory of the heavenly kingdom, He deemed enough for the world to be acquainted with at that time; but He did intimate how far short it fell of the great grandeur and sublimity of the scene, in a few words he let fall for the encouragement of His Apostles—"*Eye hath not seen, nor ear heard, neither have entered into the heart of man, the things which God hath prepared for them that love Him.*"

But we have already ventured too far into the unlimited and undefined. We have it on the highest authority that there is a termination to those brilliant orbs. That same authority which declared, that "in his Father's house there are

many mansions," has also announced, that there is beyond those, a place of unutterable woe, a place of outer darkness. We retire from such contemplation impressed with the idea of our nothingness, and a feeling that such thoughts are beyond the power of human intellect to grapple with.

CHAPTER II.

THE FIRST DAY.

"The Heavens declare the Glory of God, and the Earth showeth his handy-work."—PSALM xix. 1.

IF the conjecture of the scientific be right, our sun and our planets had each their own several beginnings. The theory is, that our sun existed before our planets, that they were all thrown off from his body at different periods, beginning with Neptune—he was first ejected, so far as we yet know. It will the better enable us to understand how this was possible, if we reflect on what has taken place, and is still taking place, on the sun's surface, even at the present time. "Professor Young was watching (in September, 1871) a mass of cloudlike form, which appeared to be suspended on the solar surface. It was about one hundred thousand miles long, and fifty-four thousand miles high, above the chromatosphere of the sun. At half-past twelve o'clock he was called away from the telescope; on returning (in less than half an hour) he was surprised to find the whole mass had been 'blown to shreds,' by some uprush from beneath, and appeared to be rapidly ascending.

In place of the quiet cloud which he had left, all around the place appeared to be filled with flying debris, filaments bright and close together, and '*rapidly ascending*,' consisting of glowing hydrogen. When the Professor first saw them on his return, they had already reached the height of nearly one hundred thousand miles. In ten minutes after, the uppermost were more than two hundred thousand miles above the solar surface. This matter so flung out from the sun, he calculated, could not have reached a height of two hundred thousand miles, at a less velocity than two hundred and ten miles in a second, and would traverse the last hundred thousand miles, at an average rate of one hundred and sixty-six miles in a second. As the hydrogen wisps arose, they gradually faded away like a dissolving cloud. The Professor adds, 'If matter projected from the sun, retains (after passing beyond the solar atmosphere) a velocity of three hundred and eighty miles per second, it will travel farther and farther from the sun. If it has a less velocity, his attraction will, in the long run, bring the projected matter to rest, and thereafter draw it back with continually increasing speed to his globe again.' The Professor's reasoning shows it to be probable, that denser matter projected with the hydrogen, retaining a much greater share of the velocity of eruption, would travel with speed exceeding that critical value, so that we have the startling con-

clusion, that in eruptions, such as that witnessed by Professor Young, the sun actually casts forth a portion of his substance, which will never be restored to him.'" According to Fra Secchi, the spectrum of the erupted prominences of the sun, indicates the presence of several metallic substances. These would be heavier than the hydrogen (the lightest of all gases.) Here then we have solar eruptions continued at the present day, from which (on the occurrence of one of greater magnitude than that witnessed by Professor Young) a mass might be propelled beyond the solar atmosphere, and driven into empty space, and yet not so sufficiently distant from the sun as to escape beyond the attraction of his mass. That attraction acting upon the erupted body, would, in combination with the eruptive force, give it a circular movement, such as has the earth round the sun, and thus the phenomena of our earth's motion in the heavens (also the motion of the moon round the earth as having been a separate portion of the erupted mass driven off from the main body) would be accounted for.

"*And the earth was without form, and void.*" That the mass was without any definite form when driven off from the sun, would be almost self-evident. The erupted hydrogen and the metallic substances ejected at the same time being of different densities, would not at first take the same form, but would move about indepen-

dently without any defined shape. The mass was therefore at first *without form.* It was *also void*—unfurnished and void of life.

"*And darkness was upon the face of the deep.*" The rays of the sun had not as yet been able to penetrate through the thick masses of hydrogen, and the vapours of the erupted metals, so "*darkness was upon the face of the deep.*" That there was *a deep*, arose simply from the gradually cooling of the various incandescent gaseous clouds, of which the erupted body was composed, just as boiling water will, on cooling, deposit its moisture on any colder substance with which it comes in contact.

"*And the Spirit of God moved upon the face of the waters.*" Hitherto the earth had been void, and without life, but when the Spirit of God moved on the face of the waters, the earliest germs of life began to appear. The whole surface of the denser mass of ejected matter having on cooling become covered with water, and that to a considerable depth, that water flowing backwards and forwards over the surface of the heavier mineral and condensed vapours, caused a friction on the lighter particles, and by constant action separated the muddy substances from the denser mass. This gradually subsiding in the restless sea, a heap of fundamental gneiss was aggregated. In the lapse of ages this became consolidated by heat, and hardened by the intrusion of igneous rocks.

Basalt, quartz, and other volcanic substances were driven up through it from beneath, and by means of heat and compression finally gave to the earth the Laurentian strata. The gneiss has been estimated in thickness at ninety thousand feet. The Laurentian, embedded in the fundamental gneiss in zones of limestone, is divided into the upper and lower series. In these what are supposed by their discoverer, and other scientific men, to be gigantic formanifera are found; their joint thicknesses have been estimated at not less than thirty thousand feet. These are composed of alternate laminæ of serpentine (a silicate of magnesia and carbonate of lime) in calcareous layers. Principal Dawson (of Montreal) has shown these, to be composed of a shelly substance, so arranged as to form stories of chambers communicating with each other; that these chambers were occupied by an animal body, extending into a canal system, corresponding to that of existing foraminifera, and that the serpentine has performed the same operation in forming bodies precisely as in the case of foraminifera forming the globigerinæ and coral out of the lime contained in the sea-water. To these foraminifera the name Eozoon has been applied (the "dawn of life.") From their having been discovered in Canada, the name Canadense was added; and in consequence of the great development of those rocks along the country drained by

the St. Lawrence, Sir Wm. Logan and his colleagues have given the name of the Laurentian. The *Eozoon* was the result of "*the Spirit of God moving on the face of the waters.*" Thus was produced the first germ of life on our globe. The next rocks superimposed on the Laurentian were upper, lower, and Cambrian. From the continued washing of the waters a vast mass of fine mud was accumulated to the depth of two thousand six hundred feet. In this were produced the next simple rudiments of life—a slight advance on the former —such as the supposed Serrularian zoophytes, commonly known as corallines. Oldhamia antiqua radiata appear on the stage in the second day.

"And God said, *Let there be light and there was light.*" The rays of the sun had at length nearly penetrated through the darkness in which the earth was enveloped, and light, as through a thick fog on a misty evening, brought the first harbinger of a gleam upon the earth. "*And evening was and morning was the first day.*" Moses has here given us a measure of one of his days. His first day began with the creation of this earth, and ended with the introduction of life in the Laurentian strata. How long was this day? The Duke of Argyle, in his recent speculation on Primeval Man, in the third paper, states that chronology is of two kinds—first, *time* measurable by years; and secondly, *time* measurable only by an ascertained order or succession of events. The one may be

called "Time absolute;" the other, "Time relative." History alone gives us a knowledge of "*time absolute.*" From other sources we can gather only the less definite information of "*time relative.*" They can disclose to us nothing more than the definite order in which certain events took place. Of the length of interval between those events neither Archæology, nor Geology, nor Ethnology can tell us anything. Of the time which had elapsed between the creation of the earth and the formation of the Laurentian strata they are silent. Of the time which it took to form the mass of Gneiss and Serpentine of ninety thousand feet, which lie at the foot of the stratified crust of the earth, they can tell us nothing. An ingenious attempt has been made by Professor Thomson to fix a rough date to the progress of the formation of this earth, by a computation of how long it took to cool from its first ejection from the sun in a gaseous state to the time at which it was capable of bearing life. Taking into account the very uncertain character of the strata of the highest temperature he infers that the whole earth must have been incandescent at some time from fifty to five hundred millions of years ago. This is but a very vague and indefinite guess at the amount of *time relative.* Professor Phillips states, that Professor Thomson assigns ninety-eight millions of years to the whole period of cooling, from a state of fusion to the earth's pre-

sent condition. Professor Haughton, with greater precision, finds one thousand and eighteen millions of years to have elapsed whilst the earth was cooled from 212° Fahrenheit to 122°, at which water may become habitable, and one thousand two hundred and eighty millions more in cooling from 122° to 77°, the probable heat of the later Eocene period in Britain. The rate of cooling for the last four thousand years has been inappreciable. This cooling theory has been contested by those who contend the internal heat is generated by chemical action, arising from the meeting of the several metals and metallic earths of which the mass of this globe is composed. This would account for volcanic action and erupted lavas, but would not the doctrine leave the incandescent and cooling theory untouched? In the latter a few millions of years, more or less, would make but slight difference in the result; but it may lead us to estimate more justly the vast extent of a Mosaic day. Return we, then, to when the earth had sufficiently cooled to admit of the first dawn of life being formed by "*the Spirit of God moving on the face of the waters.*" In the Laurentian we find the first germ of life—

THE EOZOON.

The Laurentian blending with the Gneiss formed a mass to the thickness of ninety thousand feet.

END OF THE FIRST DAY.

CHAPTER III.

THE SECOND DAY.

THE account of the second day's proceedings appear to have been devoted to a detail of the regulation of the atmosphere of the earth, or firmament, (our heaven,) with relation of the waters of the ocean to those borne aloft by the clouds, yet from geology we have other evidence of the lapse of time, which must have expired between the Laurentian and the Carboniferous formations. It would extend this work far beyond the author's intention were all the thousands of existing shells and productions of the sea to be figured, yet a mention of some of the most striking fossils in some of the numerous strata of which the crust of the earth is composed, would enable the reader to form a more just idea of the great length of the six days of the Hexæmenon, and show the constant and unremitting exercise of creative power, continued from the first; and on the end of the sixth day, when the works of creation came to a close—these will be found at the end of each day, where we have placed them. A general list of the collective strata of which the crust of the earth

is composed, beginning with the most recent, the post-tertiary, and continuing them down to the first foundation of Laurentian and Gneiss, resting on the primitive indigneous rocks, will be found at the end of the first part of the paper on the sixth day, and before that upon man.

"And God said, *Let there be a firmament in the midst of the waters, and let it divide the waters from the waters*, ... and it was so.

"And God called the firmament heaven.

"And evening was and morning was the second day."

By the firmament, our heaven or atmosphere was evidently indicated. We have no such guide to lead us to the great extent of the second day, as we had to the length of the first—neither is it likely that its duration was so extended. The time required to regulate the atmosphere, and continue the laying the foundations of the earth, and the filling the succeeding compartments with life, does not appear to have been so long as for the projection of a burning mass from the sun—the fixing its course around the solar orb, the cooling of its heated surface, the giving it form—the reducing it to order, and lastly, the introductions of the first germs of life into its inert mass. Yet we have internal evidence, from the workings of the second day, that long ages and eons must have elapsed before the evening of that day arrived.

The second day commenced with the Cambrian, and extended upwards through the Silurian, Devonian, and the old Red Sandstone to the carboniferous series. At the end of each chapter you will find a list of a few of the creations of that day, in the several strata in which they occurred. Those few were new fresh creations, and do not appear in a previous strata. These are in number but trifling compared to the vast variety of the formations of each of those series, and are merely selected for the purpose of showing that the creative energy was untiring; there was no cessation, no pause in their production, but as old races and formations died out in the lapse of thousands, and it may have been millions of years, others of new forms and races succeeded heap upon heap, lying on the sea bottom, until their united accumulations of the second day formed a mass of upwards of forty thousand feet in thickness.

"*And evening was and morning was the second day.*"

A few of the Creations of the Second Day, given merely for the purpose of showing there was no cessation to Creation.

Approximate thickness in feet.	Formations.		Fossils.
800	Upper	Old Red Sandstone and Devonian	*Plants*—Palæopteris Hibernicus, Knorria dichotoma. *Mollusca*—Anodonta Jukesii. *Fish*—Coccostens decipiens.
1,200	Middle		*Brachiopoda*—Stringocephalus Buxtini. *Fish*—Pterichchthys major. *Crustacea*—Bronteus flabellifer.
200	Lower		*Brachiopoda*—Spirifera hystericus. *Crustacea*—Homalonatus armatus, Pterygotus anglicus.
600	Upper	Silurian	*Echinodermata*—Crinoids, Crotalocrinus rugosus. *Cystidea*—Echinvencrinetus armatus. *Crustacea*—Pterygotus bilobus, Eurypterus. *Fish*—Onchus Murchisonii, Pteraspis Banksii.
900	Middle		*Brachiopoda*—Meristella crassa. *Gasteropoda*—Murchisonia angulata. Holopella tenuicincta.
1,800	Lower		*Polyzoa*—Dictyonema sociale. *Crustacea*—Conocoryphe depressa, Olenus micrurus. *Brachiopoda*—Lingulella Davisii.
1,600	Upper	Cambrian	*Mollusca*—Brachiopods and Pteropods. *Crustacea*—Trilobites, including Paradoxides Davidis.
30,000			*Hydrozoa*—Oldhamia antiqua and radiata.
42,500			*Annellida*—Histioderma Hibernica, Arenicolites didymus.

CHAPTER IV.

THE THIRD DAY.

Carboniferous.

"And God said, *Let the waters under the heaven be gathered together into one place, and let the dry land appear, and it was so.*"

HITHERTO, before the third day, the whole heavy particles of the earth were lying under the waters, and the fossil products, from which the geologists could derive their calculations of *relative time*, had their locations in the sea and on the sea bottom. After, then, the waters were gathered together, and the dry land appeared, God said, "*Let the earth bring forth grass; the herb yielding seed and the fruit tree yielding fruit after his kind, whose seed is in itself upon the earth, and it was so.*" On the third day we come to a great change in the world of fossils, as also of shell-fish, in the sea. We have grass, herbs, and trees on the earth—the trees of a soft, succulent nature, and of rapid growth. The third day commences with the carboniferous series—shale and mountain limestone.

From the commencement, mollusca and shell-fish are still predominant in the sea; but in new

forms and varieties, ammonites of different shapes, convolutions, and markings present themselves; but the great and important work of the third day appears the most needful to man; extending his power, renewing his strength, giving him light and heat, the means of increasing and varying his food—in fact, of procuring every needful enjoyment in life. Were we to be suddenly deprived of coal, the woods would soon disappear; the one-half of the civilized world in the temperate zone would shortly perish, and the other half would, perhaps, drag on a miserable existence. To prepare this needful luxury for man, nine thousand feet of strata were laid down by the Almighty long, long before man was. The earth lay in a moist, warm, steamy state, fitted for the rapid growth of soft, succulent trees and plants. Accordingly, they were shot forth in hundreds,* to grow, flourish, and decay in the course of a few years; then to be succeeded by plants of a like rapid growth and decay, thus laying the foundation of accumulated stores of warmth, to be thereafter exhumed, in the fulness of time, for the use of man. The plants were chiefly siggilaria stigmaria, calamites, lepedodendron, and of that nature most calculated for the production of coal, in which they, with their bark and seeds, are found abundantly. What says a learned professor about

* Professor Goeppert estimates the number of known fossil species as 879, of which 772 are cryptogamous.

coal:—"Coal is always found in sheets or seams, varying from a fraction of an inch to many feet in thickness, enclosed in the substance of the earth, at various depths, and between beds of rock or clay of different kinds; that every seam of coal rests upon a thinner or thicker bed of clay, known as under clay; that in South Wales and Nova Scotia, the strata containing coal attain a thickness of twelve thousand feet, and enclose eighty or one hundred seams of coal, each with its under clay, separated from those above and below by beds of sandstone and shale; that the formation appears, from minute examination by the microscope, to be composed chiefly of the sporangiæ and spores of plants, allied to the sigillaria, lepidodendron, calamites, and cryptogamous plants." The rate of accumulation of coal was very slow. Professor Huxley states—"We may safely assert that every foot of thickness of pure bituminous coal implies the quiet growth and fall of at least fifty generations of sigillariæ; that from the immense amount of loose parenchymatous tissue and wood having disappeared, we have now only a small portion of the vegetable matter produced. Assuming that one foot of coal represented fifty generations of coal plants, and that each generation took ten years to come to maturity, then each foot of coal would represent five hundred years; that the superimposed beds of coal in one coal field may amount to a thickness of fifty or sixty feet, and therefore the

coal alone in that field would represent twenty-five thousand years. But," says the Professor, "the actual coal is an insignificant portion of the total deposit, which may have amounted to between two and three miles of vertical thickness. Suppose it to be twelve thousand feet, (which is two hundred and forty times the thickness of the actual coal,) in this case the time which the coal field represents would be six millions of years!" Here let us pause to remark the wonderful accuracy in the revelation of the creation of the earth made to Moses, and of which he was himself unaware. Had the sun, then, been beaming with the full force of his rays upon the earth, the trees of the third day would have exhibited the annual rings in their construction, caused by the changes of the seasons from heat to cold, as are presented by the trees of the present day; but there are no rings to show growth or change of season in any of the trees of that day—they are ringless. The six millions of years allowed for the growth of coal would, of itself, have made a very protracted day; but there is more than this. The layers of rocky and earthy beds between each stratum of coal were slowly accumulated, mostly under water—sometimes fresh, sometimes salt. Some of these beds contained whole races of shell-fish and their descendants;—all have perished. What must have been the length of time required, after the growth and decay of numerous carbonaceous trees, for the clays to

accumulate, and for whole races of shell-fish to increase, flourish and decay—this carried on through the numerous interfused layers of coal—until many of their races became extinct. At the end of this chapter are given the names of a few of the new creations of the third day.

"*And evening was and morning was the third day.*"

Formations of the Third Day.

Names of new Creations, or newly-discovered, placed in their several strata.

Approximate thickness in feet.	Formations.	Fossils.
600	Permian, . .	*Plant*—Volbzia Phillipsii. *Mollusca*—Bakevelia antiqua, Schizodus Schlothemii, Pleurotomaria Antrina.
5,000	Coal Measures,	*Plants* (nearly eight hundred being cryptogamous)—Alethopteris lonchitidis, Calamites cannaformis, Sigillaria reniformis, Lepidodendron elegans. *Mollusca*—Goniatites crenistria. *Crustacea*—Belimurus rotundatus.
4,000	Carboniferous Limestone,	*Polyzoa*—Fenestella membranacea. *Echinodermata*—Platycrimus lævis. *Brachiopoda*—Productus semireticulatus.
9,600		

CHAPTER V.

THE FOURTH DAY.

"And God said, *Let there be lights in the firmament of the heaven, to divide the day from the night; and let them be for signs, and for seasons.*"—GENESIS i. 14.

IT is not stated by the prophet that the lights were *only then made.* The sun (as before mentioned) had existed in the heavens for many long eons before the earth or any of the planets had been dismembered from his surface. It would have been more easily understood by the limited comprehension of man, had the words been, *Let the lights appear in the firmament of the heaven.*

Theretofore they had been veiled from the earth by clouds and mists. The warm, steamy, foggy, moist atmosphere, in which the Sigillaria and other trees of the coal measures flourished and received their succulent nourishment, completely enveloped the earth, and prevented the rays of the sun from reaching it, as much as would the dense clouds of a dark foggy day at the present time.

At that great command, "*Let there be lights in*

the firmament of the heaven," the sun began to cast his splendid rays upon the earth, when, and as the cloudy mists retreated before them, he began apparently to rise and set in the heavens—that gave us *day and night*—"*And let them be for signs, and for seasons.*" Warmed by the rays, the Flora burst forth in budding beauty, in every variety of glorious color. Trees assumed their gorgeous livery, in tints most grateful to the eye, long, long ere man was there to see. These were the "signs and seasons" that winter's dreary time had passed and melted into spring. Summer advanced—seeds swelled forth on every tree and flower—"*each after his own kind.*"

As they ripened, they marked the "season" of the year. On the approach of winter, nature lay dormant, the moon performed her part in marking the allotted "times and seasons," from her retardation, and delaying her descent in the heavens; at that peculiar season, she assisted at the ripening of the seeds and fruits by her prolonged light, and gave longer time to the careful husbandman thereafter to gather in his crops, what he now rejoices in as "*the harvest moon.*" From the annual growth of the rings of the exogenous trees might have been reckoned their advancing age, and by the diurnal motion of the earth round its own axis, coupled with its annual revolution round the sun, are typified to man the "day and years," as commanded by the Almighty.

For many long years before the earth or any of the planets were extruded from his surface, the sun was shining brightly in the heavens in all his glory and majesty.

This observation will be more evident from the subsequent passage,—"He made the stars also." It does not say *when*. The fixed stars being all independent suns, many of them infinitely larger than our own, the idea that they were not made until the fourth day, and that, for the mere purpose of giving light to this off-shot of our sun, is not to be entertained for a moment, and is totally at variance with astronomical facts. They were in the heavens with their lights, and the Lord ordained, that those lights should after a given time reach the surface of this globe, penetrating through its surrounding mists. The earth must have had a greater body to revolve around, to keep it in its place by means of attraction; had it not, it would have been whirled off into empty space. We must not take a narrow and contracted, but a wide and comprehensive, view of the great and glorious works of the Almighty, and one more worthy of the majesty of the infinite Being. Moses appears to have been struck with the sublimity of the subject, and may have thought the puny works carried forward on the earth and in the sea to have been insignificant in comparison with the exalted scene passing in the heavens, when writing down the events of

the fourth day; therefore, he does not give any further description of them, but they speak for themselves.

The great work of building up and furnishing the earth was carried on without interruption, and the Triassic, Liassic, and Oolite up to the purbeck beds, were the production of the fourth day. They were not of so great a depth as the products of some of the previous days, (only about three thousand eight hundred and seventy feet,) but their components had increased in importance—many new shell fish (some old types, and others completely new, which had not appeared on the scene before.) There were Ichthyosaurs, Plesiosaurs, and Labyrinthodons of gigantic proportions —also fish, Dapedius and Platysomus, and some insectiverous marsupiæ, showing an advance in the nature of the works of creation.

"*And evening was and morning was the fourth day.*"*

* Professor Haughton and some others have thought they discovered signs of Exogenous trees in the third day; if so, what could have caused the annual rings before the rays of the sun could have fallen upon them? In the great denudations of the secondary strata of Ireland, may not some of the productions of later strata have fallen into and got intermingled with those of the carboniferous, and thus places of some of the exogenous trees become transposed?

Fossils of the Fourth Day,

Not appearing in any of the strata before those in which they are here set down or discovered.

Approximate thickness in feet.	Formations.	Fossils.
150	Purbeck Beds,	*Fish*—Microdon radiatus. *Plant*—Cycadeoidea megalophylla. *Crustacea*—Archæoniscus Edwordsii. *Reptile*—Pleurosternon ovatum. *Marsupial*—Plagiaulax Becklesii.
170	Portland Stone,	*Coral*—Isastrea oblonga, Trigonia gibbosa. *Mollusca*—Cerithium Portlandicum.
600	Kimmeridge Clay,	*Mollusca*—Rhyconella inconstans, Trigonia gibbosa, Cerithium Portlandicum. *Fish*—Ischyodus Townshendi.
180	Coral Rag, . .	*Coral*—Thecosmilia annularis. *Mollusca*—Ostrea gregaria. *Echinoderma*—Hemicidaris intermedia. *Fish*—Hybodus obtusus.
600	Oxford Clay, .	*Mollusca*—Gryhæa dilatata, Belemnites hastatus, Ammonites Jason. *Fish*—Leptolepis macropthalmus.
211	Oolite Great or Bath,	*Crinoid*—Apiocrimis rotundus. *Mollusca*—Purpuroidea nodulata. *Marsupial*—Aphitherium Broderipii. *Fish*—Leptolepis macropthalmus.
160	Inferior Oölite,	*Marsupial*—Phascolotherium Bucklandi. *Mollusca*—Terebratula fimbria, Ostrea Marsbii, Ammonites Humphresianus. *Fish*—Itrophodus subreticulatus.
1,100	Lias, ...	*Crinoid*—Extracrinus Briareus. *Mollusca*—Plagisostoma giganteum, Ammonites obtusus. *Fish*—Æachmodus Leachii. *Reptiles*—Ichthyosaurus communis, Plesiosaurus dolichodeirus.
700	Upper Trias, .	*Mollusca*—Avicula contorta, Cardium Rhœticum. *Crustacea*—Estheria minuta. *Fish*—Acrodus minimus. *Marsupial*—Microlestes antiquus.
3,870		

CHAPTER VI.

THE FIFTH DAY.

"And God said, *Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth in the open firmament of heaven.* And God created great whales, &c. . . . . And God blessed them, saying, *Be fruitful, and multiply, and fill the waters in the seas, and let fowl multiply in the earth.*"

THE waters, pursuant to that command, did swarm forth abundantly, and fowl (though of a totally different kind from those of the present day) flitted through the air.

What the length of that day or period was cannot be calculated in our present state of knowledge. Hugh Miller was of opinion that the fifth day comprehended the period of the geological secondary formation. We think the secondary embraced also the fourth day.

There are found on the surface of the earth, during the period of the fifth day, seven several sets of strata superimposed upon each other, amounting in thickness to between three thousand and four thousand feet. Take but one of these, namely, "the chalk," chiefly composed of the debris of minute

microscopic objects slowly aggregated on the bottom of an ancient sea; they accumulated, during thousands of years, to the depth of eleven hundred feet.

Of these, formanifera and animalculæ, (called globigerinæ,) with ammonites, belemnites, &c., composed the general mass of the chalk, some other organisms being imbedded along with them. Professor Huxley states, that the chambers of these globigerinæ "are filled with soft animal matter, the remains of the creature to which the globigerinæ are the shell; that this animal matter was a living particle of jelly, without mouth, nerves, muscles, or distinct organs, and only manifesting its vitality to ordinary observation by thrusting out and retracting from all parts of its surface long filamentous processes which served for arms and legs, somewhat similar to some now living in the Atlantic; yet this amorphous creature, devoid of everything which in the higher animals are called organs, is capable of feeling, growing, and multiplying—of separating from the ocean the small proportion of carbonate of lime which is held in solution in sea water, and of building up that substance into a skeleton for itself, according to a pattern which can be imitated by no other known agency. The general mass of chalk is made up of these minute granules; but embedded in this matrix are innumerable bodies—some larger, some smaller—on a rough average, not more than the

one-hundredth part of an inch in diameter, having a well-defined shape and structure."

A cubic inch of some specimens of chalk has been found by Ehreinberg to contain thousands of these bodies, compacted together with incalculable millions of granules.

"As a mere approximation, it has been estimated that these eleven hundred feet of chalk have required more than one hundred and twenty thousand years for their accumulation."

From the terse and imperative command, "Let the waters bring forth abundantly," it might be supposed that the creations of the fifth day were instantaneous; that there was but one act of creative power exercised by the Creator on that day; that immediately all He had commanded forthwith appeared. But what does geology disclose? From an examination of those seven several strata deposited within the fifth day, it is manifest that the acts of creation were continuous from eon to eon during the whole of that day of ages.

To enumerate these fresh creations in the several strata and order in which they occurred would be needless. Lists are placed at the end of this and other chapters. A few only of the newly-created have been quoted for each of the strata, of which existences none had appeared in any of the preceding formations.

These are merely given with a view to illustrate

more forcibly the fact of unremitting acts of creation, during the whole of the fifth day, pervading every layer of its three thousand six hundred feet.

Nor are these shells and fragments of shells generally of such size as would have rapidly raised up so large a heap on the bottom of the deep. What says the learned Professor? "We have already seen that the chalk in places is more than one thousand feet thick. I think you will agree with me, that it must have taken some time for the skeletons or animalculæ of a hundredth part of an inch in diameter to heap up such a mass as that."

As before mentioned, it may have occupied more than one hundred and twenty thousand years. If the eleven hundred feet thick of chalk alone required so many years in formation, what length of time must have elapsed whilst the other seven masses of the fifth day were slowly evolving? Each deposit, though containing many genera similar to those found in preceding strata, exhibited also some newly-created fish or molluscs not appearing in any previous formation, thus proving that there was a continuous creative power in activity from the beginning to the end of the fifth day, as well as in all the previous days. That new existences sprang into being from time to time, when, and as often as, the several strata then in process of formation, with the necessary surrounding circumstances, were prepared for their reception.

The chalk, besides its infinite variety of molluscs, echini, and fish, enclosed the remains of enormous Saurians, thirty to fifty feet long; Pterodactyles, with bat-like wings of great expansion; Batrachians, and others of huge proportions.

The fifth day came to a close: most of the then existing genera became extinct. The great mass of old races and forms passed away, to give place to newer shapes and existences. Throughout all changes and creations (excepting invertibrates) there was one grand type preserved—it has continued to the present; it has pervaded all creations of fish, fowl, reptile, and mammal, including man—that of the spinal vertebræ. "*And God created great whales*"—and lo! we examine deep into the fossil rocks of the fifth day, and there we find "*great whales*" entombed in their stony sepulchres.

"*And evening was and morning was the fifth day.*"

With the close of the fifth day most of the generic creations of the secondary period departed. Thenceforth we enter on a new race of created beings of the Eocene, many in shape and form resembling some of the extinct; but many others of new and dissimilar shapes, habits, and appearances.

It may be asked, how we came to allocate the several strata of the earth to the respective days of the Hexæmeron; were they so adapted by chance or placed at random? The reasons for

their adaptation are now stated, and the reader may judge for himself. Moses has given us the several acts of creation on those several days. From the time the earth was "*without form, and void,*" to the moving of the Spirit of God upon the face of the waters, and the granting of light was one day, time, or cycle—the first day.

The moving of the *Spirit of God on the waters* was the introduction of life. On referring to the first of the formations of the earth's crust, we find the earliest humble appearance of life in the Laurentian; we therefore adopt that as the first day.

If the Laurentian be rightly placed as the termination of the first day, the second day must have commenced with the Cambrian;—it certainly terminated with the Devonian. The Prophet does not assist us in fixing the beginning of the second day farther, than by the giving of life by the moving of the Spirit of God on the face of the waters towards the end of the first; but he does decidedly specify what must be its termination.

The elevation of the earth *above the waters*, and *the first appearance of the dry land*, has been ascertained by geology, and must be allotted to the carboniferous period. The first appearance of grass and herb and fruit tree followed, of course, the elevation of the land; and we find in the carboniferous formation, and in the production of coal, the result of the growth of most of the trees and plants of the third day. About them there can be

no doubt. The trees and plants of the coal were soft, spongy, and succulent, having no solid centres, and when prostrated and crushed beneath the superincumbent mass of earth, they show no sign of a solid heart, crushed and flattened as they were, leave but the impression of the bark behind. They, therefore, unquestionably mark the progress of the third day.

The fourth day opens with the first appearance of the sun—the first time it was visible from the earth; the first time it could cast the heat of its rays upon the earth, and act for *signs and seasons, and days and years;* the first time it could shine upon the grass and herb, and cause their yearly growths; the first time it could confer on the trees a greater solidity, and exhibit the marked effect of "seasons and years" by rings of annual growth. The fourth day replaced the carboniferous system by the Lias, and continued through the Oolites to the Wealden, the rocks of that day or cycle giving evidence of its works by its fossils. The Mosaic account gives no farther assistance. The fifth day commencing with the Wealden, its operations were continued to the Chalk, where it was brought to a close by meeting the deposits of the tertiary formation. Of the allocation of these to the sixth day there can be no question, as in the Eocene we have the first appearance of "*cattle, the beast of the earth;*" therefore, the creations of the sixth day being determined by Scripture, they

must have commenced where the fifth day ended. We have the Mosaic account for fixing the termination of the fifth day, but not for its beginning. The only other evidence we have for placing of the strata of that day lies in the Scriptural description of the acts of that day—"Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth," &c. Accordingly, when we examine the fossil deposits of the strata allotted herein to the fifth day, we find the waters brought forth abundantly, and that there were fowl to fly in the air. Now, our Prophet most likely knew nothing about the several formations composing the crust of the earth. Had he not been inspired, it would have been impossible for his testimony to describe the different acts of creation for the six days to agree so critically and correctly, without contradicting the incontrovertible testimony of the rocks.

Fossils of the Fifth Day.

Names of new Creations, or newly-discovered, in their several strata.

Approximate thickness in feet.	Formations.	Fossils.
100	Maestricht Beds,	*Echinoderm*—Hemipneustes radiatus. *Reptile*—Mososaurus Hofmanni.
500	Upper White Chalk,	*Echinoderm*—Galerites albogalerus. *Mollusca*—Belemnitella mucrorata, Spondylus spinosus. *Fish*—Beryx Lewisiensis. *Reptile*—Mososaurus gracilis.
600	Lower White Chalk,	*Mollusca*—Baculites baculoides, Scaphites æqualis, Turrilites costatus. *Reptile*—Pterodactylus Cuvieri.
100	Green Sand Upper, or Chloritic Series,	*Sponge*—Chenendopora fungiformis. *Coral*—Micrabacia coronula. *Mollusca*—Natica Gentii. *Reptile*—Polyptychodon interruptus.
150	Gault, . . .	*Mollusca*—Inoceramus sulcatus, Hamites intermedius.
850	Green Sand, or Lower Neocorian	*Reptile*—Polyptychodon continuous. *Coral*—Holocystis elegans. *Mollusca*—Terebratula sella, Ancyloceras gigas. *Reptiles*—Protemys serrata, Polyptychodon continuous.
1,300	Wealden, . .	*Mollusca*—Cyrena media, Unio Valdensis, Paludinum fluviorum. *Fish*—Lepidotus Mantelli. *Reptile*—Iguanodon Mantelli.
3,600		

CHAPTER VII.

THE SIXTH DAY.

"And God said, *Let the earth bring forth the living creature after his kind, and cattle, and creeping thing, and beast of the earth after his kind,* and it was so."

As on the fifth day, countless millions of inhabitants of the deep were constantly being created, generated, renewed, and destroyed, their debris adding to the formation of the seven thousand feet of rocks of the secondary epoch, so also, on the sixth day, were the cattle and beasts of the earth, and creeping things, from time to time, created, generated, increased, and multiplied for many ages, until at length, mingled with the remains of newer creations of fish and molluscs, some of fresh water, and others of the sea, and of animals on land, upwards of fourteen thousand feet of tertiary deposits were accumulated.

On the sixth day, the Eocene, with its various strata of two thousand five hundred feet of thickness, had its Palæotherium, the Elephant, its Zeuglodon, with tail of enormous length, its Chæropotami, and others of new and varying forms, "each after his own kind," on the land;

whilst the sea had also its novel creations existing during this period of geological formation. Their many successive races became extinct, and that order came to a close. The Miocene succeeded, having its strange creations of Dinothers Proboscidians, eighteen to twenty feet in length; Sivatherii, gigantic Crocodiles, Tortoises, and reptiles innumerable; their debris piled upon each other, and mingled with abraded rocks, forming a depth of eleven thousand feet.

Creations of still newer forms were continued. These increased, multiplied, and perished, when and so often as they had fulfilled their destined purposes.

The Miocene formation brought to a close, lay superimposed upon the Eocene; its members retaining vitality no longer, it gave way to yet another order of animal life—that of the Pliocene. Then were created the Mastodons, the Dinothers, the Mammoths, and many others—all new creations, and many unlike those which had gone before.

These multiplied upon the face of the earth for a long series of years, so abundantly, that of one kind alone (the Mammoth or Woolly Elephant) their fossil tusks are dug up in Siberia in such enormous quantities, that according to Lyell, these remnants of the ancient dead, these tusks, are more numerous than those of the whole of the existing Elephantine race.

M. Deshayes of Paris, after comparing three thousand fossil species of the tertiary strata, with five thousand of the now living species, arrived at the result, that in the lower tertiary, or Eocene strata, (being those of the early part of the sixth day,) there were about three and a-half per cent. identical with the recent. That in the middle tertiary, or Miocene, there were about seventeen per cent., and in the upper tertiary, or Pliocene, from thirty to fifty per cent, and sometimes in the most modern beds, or post-Pliocene, as much as ninety or ninety-five per cent. Here, then, of the races which lived at the commencement of the Eocene, (that is more than three millions of years ago,) we have three and a-half per cent. of those races still in existence. God's command given at the beginning of the fifth day—"Let the waters bring forth abundantly," and on the sixth day—"*Let the earth bring forth living creatures, cattle and beasts of the earth.*"

They also increased abundantly. These commands were strictly obeyed; we find, accordingly, piles of strata of rocks for the fifth and sixth days, to the thickness of about eighteen thousand feet, commingled with other atoms on the floor of the ocean, others on the land in strata, mixt up with the waste and debris of mountains and rocks.

The Bible gives you the time of their creation, partly positive, so far as fixing them in the fifth and sixth days, but relative as to the indefinite

length of those days. Geology confirms the sequence, by finding the remains in the order laid down. Astronomy confirms both, by giving a close approximation to positive time.

As yet, in this brief sketch, we are little more than half way through the enumeration of a few of the leading races of the successive creations of the sixth day; many of its forms had become extinct, yet there were more and newer to come, before the closing of that day; among them was man, the greatest and noblest of them all.

Before taking up that of the creations of the many races of man, we shall give a list of the several strata of which the crust of the earth is composed, as given by Sir Charles Lyell, which will tend to the better understanding of the state of the surface of the earth, at the time the first races of mankind made their appearance, so far as has yet been traced back. First, we give a list of the several formations of the sixth day, with those of new formations of that day, and not known to have existed in the fifth day or secondary period.

Some of the New Fossils of the Sixth Day.

Approximate thickness in feet.	Formations.	Fossils.
150	Recent Pliocene and Post-Pliocene,	*Man*—Palæolithic Implements found in early drift, Neolithic Tools and warlike implements found in the later drift, &c. *Mollusca*—Pecten Islandicus, Trophon clathratus.
	Drift in Kildare, 100 ft. to 150,	*Mammalia*—Cervus Tarandus, Elephas primigenius, Rhinoceros leptorhinus, *extinct.*
200	Newer Pliocene,	*Mollusca*—Astarte Borealis, Scaloria Grœnlandica. *Mammals*—Elephas meridionalis, Hippopotamus major, &c.
550	Older Pliocene,	*Tropical Shells*—Nucula Cobboldiæ, Fusus (Trophon) antiquus, Voluta Lamberti. *Mammals*—Mastodon Arvernensis, Rhinoceros Schleismacheri.
3,000	Upper Miocene in Sivellik Hills,	*Plants*—Platanus aceroides, Oliva Dufresnii. *Mammalia*—Sivatherium semnopithecus, Dinotherium giganteum.
8,000	Lower Miocene,	*Plant*—Sequoia Langssdorfi. *Mollusca*—Leda Deschayesiana. *Mammals*—Hyopotamus bovinus, Machairodus.
285	Upper Eocene,	*Plant*—Chara medicaginula. *Mollusca*—Bulimus ellipticus, Cerithium concavum. *Reptile*—Trionyx incrossatus. *Mammals*—Anoplotherium commune, Palæotherium magnum.
1,540	Middle Eocene,	*Coral*—Litharea Websteri. *Formanifera*—Nummulites lævigatus. *Mollusca*—Conus dormitor. *Reptile*—Crocodilus Hastingsiæ. *Mammalia*—Lophiodon mininimus.
730	Lower Eocene,	*Plant*—Nipadites sembonatus. *Crustacea*—Zanthopsis tuberculata. *Mollusca*—Nautilus imperialis. *Fish*—Cælopoma Colci. *Bird*—Lithornis Vulturinus. *Mammal*—Coryphodon Eocenus. *Reptile*—Palæophis toliapicus.
14,455		

For the lists of strata following each of the six days, I am indebted to the kindness of Mr. William Hillier Baily of the Geological Survey of Ireland, who, I may state, is not at all answerable for the views I have now advanced, not having in fact known or seen more of them than are contained in those lists. These tables are given merely with a view of showing constant and continued acts of creative power, through the whole of the several formations from the first to the sixth day. It is intended to quote only a few instances in each formation out of the numerous newly-created classes. Those selected have been allocated to the strata in which they first appear, as not having been discovered in any previous, showing conclusively, that each new stratum contained some distinct fossils peculiar to itself, though there were also many in that stratum which had appeared in the one previous.

List of Formations according to Sir Charles Lyell.

Approximate thickness in feet.		
150	1. Recent, ...	The Sixth Day.
	2. Post-Pliocene, . . .	
200	3. Newer Pliocene, . . .	
550	4. Older Pliocene, . . .	
3,000	5. Upper Miocene, . . .	
8,000	6. Lower Miocene, . . .	
285	7. Upper Eocene, . . .	
1,540	8. Middle Eocene, . . .	
730	9. Lower Eocene, . . .	
14,455		

LIST OF FORMATIONS—*continued.*

Approximate thickness in feet.		
100	10. Maestricht Beds,	The Fifth Day.
1,100	11. Upper and Lower White Chalk,	
100	12. Upper Green Sand,	
150	13. Ghault,	
850	14. Lower Green Sand,	
1,300	15. Wealden,	
3,600		
150	16. Purbeck Beds,	The Fourth Day.
170	17. Portland Stone,	
600	18. Kimmeridge Clay,	
180	19. Coral Ray,	
600	20. Oxford Clay,	
211	21. Great or Bath Oolite,	
160	22. Inferior Oolite,	
1,100	23. Lias,	
700	24. Upper Trias,	
1,300	25. Middle Trias,	
1,500	26. Lower Trias,	
6,671		
600	27. Permian,	The Third Day.
5,000	28. Coal Measures,	
4,000	29. Carboniferous Limestone,	
9,600		
800	30. Upper Devonian,	The Second Day.
1,200	31. Middle Devonian,	
200	32. Lower Devonian,	
6,000	33. Upper Silurian,	
900	34. Middle Silurian,	
1,800	35. Lower Silurian,	
1,600	36. Upper Cambrian,	
30,000	37. Lower Cambrian,	
42,500		
90,000	38. Upper Laurentian,	The First Day.
	39. Lower Laurentian,	
132,500		

I now give a general summary of the thickness of the strata formed in each of the six days.

Approximate thickness in feet.	Day.	Strata.
90,000	The First Day,	From the Lower gneiss to the Upper Laurentian.
78,500	The Second Day,	From the Cambrian to the Sandstone and Devonian.
9,600	The Third Day,	From the Carboniferous Limestone to the Upper Trias.
6,670	The Fourth Day,	From the Trias to the Purbeck beds.
3,600	The Fifth Day,	From the Wealden up to the Mæstricht beds.
14,455	The Sixth Day,	From the Lower Cocene up to the Post Pliocene, Eocene, and recent.

CHAPTER VIII.

PRE-ADAMITE.

It is time to make some preliminary enquiries, so far as is possible, to try and discover at what time time the Creation of Man first occurred.

We have, from the Mosaic record, the traditional history of *the special* Adam and his descendants, down to the time of the Noachian Deluge. We have also, through Holy Writ and general history, an account of the descendants of Noah, and of his family, through many changes and eventualities down to the present day. From these we learn that the Creation of *our Adam* was consummated nearly six thousand years ago; that active creative energy had ceased with the formatiom of Eve; that the sixth day was then brought to a close; that when the seventh commenced, the farther evolvement of new creations on this earth ceased, and our reckoning of our time began.

But our difficulty in estimating time lies before that. All before the day of Adam and Eve is *relative time.* Men have tried to make estimates of it, by the ages required to form coal and chalk,

&c. There are other ways of seeking approximations; for instance, in the duration of the races of shell-fish and of animals, but they leave us still bewildered *in relative time.* Brachiopod shells make their appearance in the lower Silurian, and continue to exhibit themselves with persistency, but with matchless variety of figure and form, in every strata, from thence up to and through the chalk to the present day; the duration of that race was for millions of years, but still only indicate relative time. The Eocene, Miocene, and Pliocene exhausted three races of a variety of animals, three races of many classes became extinct, and but three and a-half per cent. of them remain to this hour. With their exception all are new. The races which followed, viz., those made for Adam,* and named by him in the garden, are yet existing, none have been lost; and though nearly six thousand years have elapsed, they may not become extinct for ten times that period. We can make no approach by these means to *positive time.*

Returning to the creations of the Pliocene period, let us adopt for illustration one of the most conspicuous, the Mammoth. He was unquestionably of the Pliocene and post-Pliocene. Besides his importance in the scale of animal life

* It is remarkable that the word "*Adam*" was only used by the ancient Chaldeans in a general sense as *man*, not as the proper name of an individual.--Smyth's Chaldean account of Genesis, p. 295.

upon the earth in that period, the facility offered for tracing his remains by his great size, and the indestructibility of his bones, there is a still more important reason for selecting him. He was the cotemporary of *man*, not of *the special Adam* of *the second* chapter of Genesis, with whom our historic time may be said to have commenced, but of man or mankind of revelation—mankind of the first chapter of Genesis—mankind of the Pliocene or post-Pliocene epoch—the man of that creation, "*male and female*"—the man of the Palæolithic and Neolithic implements, to whom dominion was granted over fish, flesh, and fowl, and over all the earth—man who, in the exercise of his dominion, lived and fought with, and subdued huge animals of the extinct races.

So many decided proofs have been produced of late of their having lived and struggled together, that the fact may be taken as now fully established. The offensive weapons of the man, his rude spear, his hatchet and arrow-head of flint. The scraper used in separating the flesh from the bones of his prostrate foe, (rude implements with which to attack and strike down such powerful adversaries,) have all been found in proximity to the remains of his pre-adamite victim, and that at different places in France, in Great Britain and Ireland, in Germany, Norway, Denmark, and Sweden, and in other countries remains are found in the post-Pliocene period.

Lyell states that the Mammoth lived in post-Pliocene as well as in the Pliocene epoch, that the evidences of his existence cotemporary with man were *post-Pliocene*. Sir Charles was of opinion that man might yet be traced into the Pliocene. His conjecture appears now to be on the eve of being realized as an established fact, and even carried further back.

According to a letter of Sir John Lubbock, given in that week's "*Nature*," and copied into the *London Times* of the 28th March, 1873, Mr. Frank Calvert had discovered in *Miocene* strata conclusive evidence of the existence of man in that epoch. He had met with the fragment of a bone, (it may have been of Dinotherium or Mastodon,) on the convex side of which is engraved a representation of a horned quadruped with arched neck, lozenge-shaped chest, long body, straight fore-legs, and broad feet. "There were traces of other figures engraved on the bone, but nearly obliterated. There were also bones broken, as if for the extraction of marrow, in the same stratum, and a flint flake. Mr. Calvert had no doubt as to the geological age of the stratum from whence those specimens were obtained."

Should this discovery be found to be actually in the Miocene, undisturbed, and without the possibility of the bone having fallen into its position from an upper bed of either Pliocene or post-Pliocene, it would carry back the existence of man to

pre-glacial times, and to thousands, or it may be a million of years, before the days of our Adam—to a time at which the earth may have been fully inhabited with human beings, and with races afterwards swept away or destroyed during the rapidity of the drift of the glacial epoch. This discovery affords further evidence of the "several creations of man," continuing with increasing energy through countless ages from Miocene times, down to the time of their close with the creation of Eve.

The discovery of Palæolithic implements in the drift following the first glacial period of the post-Pliocene, and also in that succeeding the great glacial epoch, would prove the continuance of man's existence before those times, viz., in the latter instance about two hundred thousand, in the former, three hundred thousand years ago.

Denoyer discovered in Pliocene beds at St. Prest, many bones of animals scored and notched and marked, so as to induce a belief that the marks were made by the agency of man, by means of flint implements, when the bones were fresh. Mr. James Geikie, in a postscript at the end of his work on the great ice age, states he had just received information (from Mr. Tideman) that in an exploration of the Victoria cave, near Little, in Yorkshire, a bone had been found, which Mr. Burk identified as human—portion of an unusually clumsy fibula, and not unlike the fibula bone in the mentone skeleton. The interest of the disco-

very, he says, consists in the fact, that the deposit from which the bone was obtained was overlaid by a bed of stiff glacial clay, containing ice-scratched boulders, a direct proof that man lived in England prior to the last glacial period. That would have been about one hundred and fifty thousand years before our Adam.

Farther proof may be required before the fact of the Miocene life of man is received as fully established; that of the Pliocene appears now to be conceded. It has been objected, that had man existed in Pliocene times some of his bones would have been found in a fossil state in that formation. In the early stages of man's existence he would not be likely to have buried his dead. Where the body fell, there would it be left; the flesh a prey to the vultures or other creatures. The hyæna and other carnivorous animals would have craunched the soft bones. Had any remained, they would not, owing to their perishable nature, have withstood the action of the air, the corroding effects of time, and the irresistible movement of the drift. Sir John Lubbock, in his "Pre-Historic Times," asserts, that no fossil remains have been found in Pliocene deposits so small as those of man, whilst those of the larger animals have been abundant.

The post-Pliocene had its own peculiar creations; but, according to Lyell, their fossil remains became mingled occasionally with those of the

Pliocene deposits. Among these were the Elephas primigenius, Rhinoceras tichorhinus, Equiis fossilis, Bos primigenius, Felis spelœa, and many others. With the remains of these were found the flint implements of man, taken from depths from twenty to thirty feet, and intermediate below the surface, resting, in many instances, upon or near the chalk, the several upper strata having been broken up and scattered by the tumultuous rush of water during the events of the drifts. But whether these traces of man were of Miocene, Pliocene, or post-Pliocene, they existed, in any of those cases, thousands of years before the day of *Our Adam*. Supposing this fact to be firmly established, would it in any way militate against the Mosaic account of the order of creation, or be in the least degree at variance with it? Would it not be in full accordance with the undeviating course of continuous creation, constantly and unceasingly active and progressive; an activity continuing from the time when "the Spirit of God moved upon the face of the deep," down to the time when (on the creation of Eve) the sixth day was brought to a close. "God saw everything that he had made, and behold it was very good." Then was the present course of nature, of time and the seasons established. The Almighty rested, or rather ceased, from new creations on this globe. The earth had brought forth grass and herb yielding seed *after his kind*, and trees yielding fruit

whose seed was in itself. The waters brought forth abundantly everything *after its kind;* the winged fowl *after its kind;* the living creature, cattle, and creeping thing, and beast of the earth *after his kind;* all brought forth *after their respective kinds*—then why not man? Mankind were created *male and female*, and commanded to be fruitful, to multiply and replenish the earth. According to a modern authority, he should trace back his ancestor, not to a man, but to a monad. Here is the conclusion drawn by an able and learned man, representing the ideas of a few of a modern school: "In the dim obscurity of the past we can see that the early progenitor of *all the vertebratæ* must have been an aquatic animal, provided with Branchiæ. . . . . This animal seems to have been more like the larvæ of our existing marine ascidians than any other form known."

From this state, the author would lead us through a vast lapse of time, and through multiplied changes and transmigrations, until at length, after passing into ape-like progenitors, they should arrive at the dignified stage of human beings. To follow up this subject would lead us away from the object of these few pages. I shall therefore only remark that, according to the Mosaic account, mankind was expressly created *as man*, "male and female," and as such, ordered to increase and multiply, and replenish the earth. That we have the history of the race of *the Adam* by tradition

for nearly two thousand years, and a subsequent written history for nearly four thousand more. That during all that time, and in those two histories, we have no account of the transformation of an ape into a man, nor any account of the commencement, progress or ending of such transformation. Had it been in the course of events that such changes or developments could have taken place, they would have been in progress to the present hour; we should have detected, and history have recorded, all stages of progresssion, from the ascidian to the monkey, and from the monkey into the man; no such transmigration or state of transition has been discovered; the description of Moses holds good, "*everything after its own kind.*" There were many fabulous and mythical histories of the creation of the earth and of its inhabitants prevalent during the early history of man, but among them all, there was only one probable and rational—only one that has stood the test of scientific investigation and of time; only one which geology has proved, and only one which ethnology has confirmed; that one was written at a time before geology was a science or ethnology had a name—a time when all the other stories of the creation were but childish fables and absurdities. Let us therefore abide by the sacred history of the creation and descent of man, as revealed to us, instead of searching for our progenitors amongst ascidians or other aquatic animals, or finally among apes and monkeys.

Having examined the nature of the several strata, from the secondary to the post-Pliocene, we can discover that the efflux of time during which the many creations of animal life, of which those several strata were chiefly composed, must have exhausted millions of years. We have not been enabled from geology to deduce any evidence to show *what that time must have been.* There is nothing in the crust of the earth of itself to enable us to put a name upon the "*When*" of any particular formation. We must seek for that evidence elsewhere, and even so, it can only help us to make a very rough approximation. We know from the traces left, that there were times when a great part of the northern hemisphere was covered by a cap of snow. Now we can only discern in the remaining glaciers, a few frozen rivers descending slowly from the mountain tops, and depositing, as they move along, the debris of the rocks picked up in their travels through the neve-bound districts. Then came other times, long subsequent to the slow solemn march of the ice-bound rivers, when warm cycles prevailed, the frozen rivers were released, and the long pent-up waters set at liberty. They (as if rejoicing in their freedom) rushed furiously from every mountain top and hilly side, collecting fresh force from every dale and valley, carrying with them, in their tumultuous rush, vast masses of clay, sand, and gravel, marking their course with devastation and

ruin, dropping in heaps their mixed and muddy burdens, and scattering their spoils broadcast over the whole surface of the plains to the depth of one hundred to two hundred feet or more. These deposits have been called drifts. Little way has yet been made in penetrating these heaps.

Trifling as it is, we have come on the traces of man, (*of Palæolithic man*,) and have dug up his rude and unpolished implements of war and the chase, some rolled and water-worn in the drift, others more perfect, lost perhaps through holes broken in the frozen rivers, it is conjectured, by the natives, for the probable purpose of fishing and obtaining water. These have been found in so many parts of Europe, in localities so far apart, as to prove those countries to have been thickly populated before these drifts. When were the times of those drifts? Could we fix their date, we should have made a stride toward approximation of the onward march of time.

To ascertain *when* there could have been such cold periods as to have produced so great a northern embodiment of snow and ice, and then, at what other times the cold could have been overcome by heat, and the congealed waters set free, we must resort to the heavens for answer; we cannot adduce it from the earth alone. From astronomy we can learn there have been many changes of climate, with warm and cold cycles succeeding

each other alternately, every ten thousand five hundred years, and these changes continuing for millions of years, we might say from almost this earth's BEGINNING.

Astronomers tell us that at the culmination of a warm cycle the orbit of the earth becomes nearly circular. As years roll on, and our planet progresses in its path, it becomes affected by the attraction of the exterior planets, particularly Jupiter and Saturn. They drag at the earth, (as it were,) assisted by diverse actions of the sun and moon, until it deviates from its circular course; its orbit becomes elliptical, its course about the sun eccentric, sometimes to the extent of its extreme limit (fourteen to fifteen millions of miles.) These were the times of cold cycles. Our last great glacial epoch occurred two hundred and ten thousand years ago. Majestically solemn and slow is this great movement of our orb—inappreciable to us! How could such facts have been discovered? We have had among our great astronomers Leverriere, (one of the most celebrated, lately dead;) he had given a formula for ascertaining the eccentricities of the earth's orbit. Mr. Croll, of Edinburgh, assisted by Mr. Stone, of the Greenwich Observatory, tabulated those calculations at the request of Sir Charles Lyell. Sir Charles approved of and adopted them. From those tables a diagram has been prepared, (you have part of it annexed,) showing some of the greatest of the warm

and cold cycles which have occurred on the surface of the earth for one million of years prior to the year 1800. The original formula gave the cycles for three millions of years, as well as those most likely to occur for one million of years hereafter from the same period.

Preceding that great era of cold, there were several minor cycles of heat and cold alternately, which together lasted three hundred and fifty thousand years in the post-Pliocene, during some of which man may have lived and enjoyed genial or moderately temperate climates. The fabricators of those rude and early implements have used them in their contests with the mammoth and other contemporary animals. We collect from that formula that the sixth Mosaical day was upwards of three millions of years in extent, and it is likely the other five days were equally long—(the first day much longer.) The works of the Almighty follow a regular course, fixed and determined on in His wisdom before this earth's *beginning*. The figures 1 to 15, at each end of the annexed diagram, indicate the number of millions of miles of the eccentricity. The nearer the approach to fifteen millions of miles the greater the cold. The warm cycles, being those of the least ellipse, are toward the base of the diagram.

I now touch but lightly on the eccentricity of the earth's orbit, having entered upon the subject before in the work upon pre-glacial man. It is not

necessary for the present purpose to enter more fully into it than sufficient to give assistance toward approximating the date of the period of the great drift and the smaller ones, previous to those times when Palæolithic man was an inhabitant of the earth. It is not to be supposed that the glacial epoch was altogether attributable to eccentricity. There were several phenomena to be taken into account before that complex and difficult question could be solved; such as, the precession of the equinoxes; the obliquity of the ecliptic; the revolution of the apsides; whether the winters occurred when the northern pole of the earth was in aphelion; also the effects of the currents of the ocean had to be calculated and allowed for, &c. Those wishing to enter more deeply into the question, will find it carefully treated in chapter 3 of Lyell's "Principles," &c., 10th edition; and with numerous references also, in the great ice age, by James Geikie, who has well elucidated it, and has entered into it minutely, and to Mr. Croll's important papers on the subject. Sir Charles states, that in each cycle of twenty-one thousand years, the equinoxes will have made a complete revolution, so as again to coincide with the same point in the orbit as at present, and in half that period, or about ten thousand five hundred years, the present state of things will be reversed; so that winter will occur in our hemisphere in aphelion at the north and in perihelion at the south pole. Geikie says:

"If it be astronomically and physically true that the extreme eccentricity of the earth's orbit, combined with the precession of the equinoxes, would confer upon our hemisphere long periods of continuous summer, separated by equally long periods of continuous Arctic winters, we may next inquire whether there are any geological facts connected with the till itself which would lead us to infer that our glacial epoch was in reality not one continuous age of ice, but a period interrupted by long ages of milder conditions, during which the ice disappeared from low-lying parts of the country, and may even have vanished for a time altogether; such appears to have actually been the geological state of mundane affairs."

Your attention is now called to a few points. The following extract from the diagram.

Toward the close of the Pliocene you will find a warm cycle, when the eccentricity was three millions of miles, and towards the end of the post-Pliocene is another period of tropical heat, when the eccentricity stood at two and a quarter millions. At these times the orbit was nearly circular—the northern Pole of the Earth was in Perihelion, and snow and ice had vanished, or nearly so, from within the arctic circle.

The next two points inviting your attention are where the ellipticity is marked respectively seven three-quarters and eight and a-half.

Those were two glacial periods; after the first

and before the second of these two periods came two others of interglacial heat, where four and a-half and six show respectively great diminution of cold, and increase of temperature.

Between those two milder periods came our last great glacial epoch, where the eccentricity rose to ten millions and a-half. Then was the whole of Europe and the northern portion of Asia buried under a great ice sheet, to the depth, it has been calculated, of five thousand or six thousand feet, exhibiting such appearance as is now presented on an approach to the antarctic circle. All life was then destroyed within the range of this ice-cap. Some of this has not even melted yet, for some carcases have been found buried in it of the mammoth or woolly elephant; (in one instance preserved entire;) the remains of several other animals have been discovered embedded in it, but above all traces of man, of *Palæolithic man.* Man, therefore, existed before the great glacial epoch, and that was two hundred and ten thousand years ago. He probably existed prior to and during the warm temperature of the latter part of the Pliocene, when the ellipticity stood at two and a-half millions of miles, (being half a million less than that of our orbit at the present day, and with of course a rather more temperate climate.) Man had then for his cotemporaries, the lion, the hippopotamus, the elephant, rhinoceros, and others of southern climes.

E SIXTH

550

00

50 Thousand Years

B.C. 4004.

O AD. 1800.

Climate, Co-occupants, and Submergence.	Climate, Co-occupants, and Submergence.
A. Climate, Tropical. Eccentricity, 1⅛. 350,000 years ago. Palæolithic Man appears. Co-occupants—Lion, Tiger, Hyæna, Elephant, Hippopotamus, Rhinoceros. Tropical Flora and Shell-fish.	G. Sea covers land to extent of 1,200 feet in Scotland and 2,000 feet in Wales. Eccentricity, 6.
B. Changing to cold. Eccentricity, 4. The same Fauna, Flora, and Shell-fish.	H. Another period of cold. Eccentricity, 8½. Cold moderating. The great drift. Sea again invades the land.
C. Climate, Arctic. Mammoth, Lemming, Woolly Rhinoceros, Cave Bear, and others. Arctic Flora and Shell-fish. Land submerged to extent of several hundred feet. Great Britain separated from the Continent.	I. Neolithic Man appears. Time, 50,000 years ago. Reindeer, Woolly Rhinoceros, Cervus megaceros. Land rises. Great Britain separated from Continent and Ireland.
D. Interglacial period. Climate still cold, but moderated.	J. Climate again warm. Eccentricity, 2¼. Neolithic Man continues. The Man of the kitchen middens. Then of the lake dwellings. Merging into the age of bronze. Modern Fauna and Flora. Then our Adam. Nearly 6,000 years ago.
E. AND F. Great Glacial epoch. Intense cold. Snow and Ice-cap of from 5,000 to 6,000 feet. Eccentricity, 10½ millions miles. Palæolithic Man annihilated. Fauna and Flora buried in snow and ice, and destroyed.	

By these he was deserted before the next glacial period. They retreated on the approach of cold, and sought again more southern latitudes. As they departed, other animals arrived from northern districts, to compete with him for possession of that part of the earth—namely, the mammoth, the woolly rhinoceros, the cave-bear, and others. Man, however, was able to contend with the climate of the first glacial period, which occurred when the eccentricity increased to seven millions and three quarters, and so also were the animals which invaded his territory from northern regions.

Having been able to surmount that point, there would have been nothing to prevent man existing during the several minor interglacial phases, (not given in diagram, in one of which the elliptical form was contracting to four and a-half.) Again it increased to eight millions of miles; after that, and before the eccentricity arrived at ten and a-half millions, and long before the ice-cap had buried Europe to the depth of five thousand or six thousand feet, man must have been annihilated, all the co-existing animals in Europe and Northern Asia must have been destroyed. On the gradual return of a warmer cycle through many minor interglacial periods, the eccentricity arrived again at six millions. The rays of the sun had power to melt partially the ice-cap of the great glacial epoch, ere the contraction to that amount was attained. The climate became once

more sufficiently temperate to be habitable by man and animals, though much more severe than that of the present day. They may have come from warmer climates, or there may have been, and most likely were, new creations suited to the climate in which they were then placed, but we have un- doubted testimony that man once more inhabited Europe. Not the men of the same race who had appeared before. *Not Palæolithic man*, who had been exterminated in the great glacial age, but man to be distinguished by his neolithic implements. How, it may be asked, were these facts discovered? By unquestionable evidence.

After each of the three glacial epochs of the post-Pliocene, there were gradual meltings of the ice-caps, and snow-glaciers were always moving by their own weight and pressure down valleys, and tending towards the sea. As they moved along, they bore with them the rocks collected during their passage, and all the clay and mud they had torn from the surface of the earth over which they grated as they moved on with their immense weight. The rocks were striated by scrapings and rubbings, being ground upon the rocks over which they passed. These clays and muds mixed with the rolled and striated stones are called in Scotland *Till*. After those were deposited came other aggregations of rocks and clays, different in kind from the other, and produced from different agencies. Owing to the action

of the cold, and the ice-caps moving into the waters of the ocean, the earth contracted and subsided, and the shallow seas filled with ice were raised above the land to the extent of three or four hundred feet. During the great glacial epoch the sea overwhelmed the land to the extent of one thousand two hundred feet in Scotland, and of two thousand feet in Wales, and in the third glacial period it encroached a considerable extent upon the land once more.

During part of the great glacial epoch, Great Britain and Ireland were like an archipelago, only the tops of the mountains appearing above the sea. The waters bearing with them numerous icebergs. These carried (attached to them) the rocks of the countries from whence they had drifted, and the clays, muds, and sands they had torn from off the sea-bottoms from which they had been detached. When the waters began to subside, some of the icebergs grounded, and deposited, where they struck or stranded, on the depressed countries their heaps of rocks which are called erratics, those boulder stones being from foreign districts, and not local; (as were those deposited by glaciers;) the clays which they dropped, called boulder clays, are commingled with whole and broken arctic shells. Some of these heaps fell on and buried the remains of the till left by ice-caps and glaciers; thus were those tills sealed down, as it were, and their contents, where undisturbed,

preserved to give their testimony to after ages of the extent of the inundation of the land by the ocean. In the first and second deposits of till are found traces and implements of Palæolithic man. These traces all disappear before the deposition of three classes of till, after the last glacial period; in it they are no longer found, proving that before then Palœolithic man had been destroyed by the ice-caps of the great glacial epoch the manufacture of his implements had ceased.

In the third class of till sealed down (about one hundred thousand years ago) are found other traces of man—of the man who constructed Neolithic implements—tools of more perfect finish and form than those of the Palœolithic age, and of greater variety, being made of many kinds of stone, of bone, and of horn. The Palœolithic were all chipped out of flint. After the first and second glacial epochs, (on the sea retiring from the land,) these countries resumed much of their antient boundaries, and became once more continental; but after the last interglacial period, when the earth became freed from the waters, Great Britain was no longer united to the continent—the connexion was severed—and the sea of the Straits of Dover and the German ocean rolled between. Ireland was also cut off from England, and both remained much as at present, save for some partial encroachments of the sea upon the land, chiefly upon the eastern coast.

To prove how slowly a great ice-cap yields to the power of the sun after the contraction of the eccentricity, and the warm cycle had set in for many thousand years, we have only to look at the present state of Greenland. So far as it has been discovered, there are traces even there of its having at former periods enjoyed tropical climates. Look at it now—its present forlorn aspect is most graphically described by Mr. Geikie in his noble work on the great ice-age. His description of one of its great glaciers will be found at pages 56 and 57. It conveys a forcible picture of that most desolate country. He says:—

"Fast as the snows deepen and harden into ice upon the bleak wilds of Greenland, that ice creeps away to the coast, and thus, from frozen reservoirs of the interior, innumerable glaciers force themselves down every fiord and opening to the sea." Again: "Some of the glaciers attain a vast size. The great Humboldt glacier is said by its discoverer (Dr. Kane) to have a breadth of sixty miles at its termination." Its seaward face yet rises abruptly from the level of the water to the height of three hundred feet, but to what extent it descends is not known. Other glaciers of large size occur frequently along the whole extent of the north-western shores of Greenland.

Those great glaciers, when they have crept for miles into the depths of the ocean, break off from the parent mass, and float away as independent

icebergs, either to melt in the seas of more southern latitudes, or be cast upon some coast where the land has been depressed below sea-level, and there deposit its burthen of erratic stones, and cover them over with its boulder clays.

These changes from heat to cold, and again to heat and cold, have always been taking place, from the latest of the post-Pliocene to the earliest formations. The striated rocks and stones and the boulders found even down through the secondary formations prove this; and had Leverier carried back his formula to the older strata, he would conclusively have proved the fact; as it is we must be content with what he has left. He did not even try back to the commencement of the sixth day; he went but as far as the middle Eocene. In the present diagram we have only carried back to the lower Miocene; but in "Pre-Glacial Man" we have gone back to three millions of miles, and forward one million.

Before we leave the diagram, it will be interesting to glance back at the various mutations of our eccentric orbit, and to observe, in the lapse of one million of years, the change there has been in the effect of the attraction of the superior planets upon our orbit. There have been in each of the great divisions of upper, middle, and lower Miocene, and of upper, middle, and lower Eocene, three decided great alterations—hot, cold, and hot alternately—some of them almost identical in their

ranges of eccentricity with our own post-Pliocene periods. In two, the culminating glacial epochs were greater, in all the others, less than our own, but the degrees of heat in several were greater; their respective great ranges for either heat or cold were generally in successions of threes. What were the attractive influences which were brought to bear on our orbit, so as to draw it out to thirteen and a-half millions, in the upper Miocene, and to thirteen millions of miles in the middle Eocene, we know not. Leverier could have told us, and we have yet some astronomers left who could give the calculation if worth the trouble.

From the last few pages we may collect the following—

1st. That pre-glacial man, the man of the Palœolithic implements, was placed on this earth towards the termination of the Pliocene period.

2nd. That his cotemporary animals were the elephant, lion, hyæna, spelœa, the hippopotamus, rhinoceros, meigalonyx, and others from a warm climate.

That the shell-fish and flora were of a tropical character.

3rd. That man continued to inhabit the land until the warm cycle had passed away, and when succeeded by the colder atmosphere, the animals of the more temperate regions fled before the increasing chill, and left man to combat with it alone.

4th. That driven from the polar districts by the encroaching frosts, the more temperate parts of Europe and Asia were invaded by other races of mammals accustomed to a rigorous climate. The mammoth, the woolly rhinoceros, the cave bear, and others coming into the south of Europe, became co-occupants with man.

5th. That they struggled against the severity of the climate through the cold of the first glacial period of the post-Pliocene, and afterwards enjoyed the milder relaxation, when the eccentricity retracted from seven three-quarters to four and a-half.

6th. That when it again expanded, and approached to ten and a-half millions of miles, both man and beast were destroyed, and buried beneath a cap of ice and snow, to the depth of five thousand or six thousand feet, that probably was between two hundred and thirty thousand, and two hundred and forty thousand years ago.

7th. That Palæolithic man never re-appeared. After several cycles of heat and cold had intervened, another considerable interglacial period occurred, when the range of eccentricity attained eight and a-half millions of miles. Before that it is not likely the snow and ice of the great glacial epoch had melted, nor that the surface of the earth had recovered from the deundation caused by the great drift.

Man, however, *Neolithic man*, had made his ap-

pearance in the south of Europe, and had to contend with an arctic climate, which he struggled through until the approach of the last great increase of temperature, when the eccentricity stood at two and a-quarter. This occurred fifty thousand years before the year one thousand eight hundred.

8th. This was quite a new creation of man—man of totally different habits from those of the Palæolithic implements—man whose weapons were all of a new type—the Neolithic man, who was also accompanied by new races of animals. He had the cervus megaceros, the urus, and others, now extinct, for food—the man whose descendants were of the lake dwellings and the kitchen middens—of whom some races may exist at this day, as mentioned hereafter.

When the land which had been submerged to the extent of some hundred feet again emerged, Great Britain was no longer continental. It was separated both from France, Germany, and Ireland, and thenceforth stood alone as at this day.

Having given this short outline as briefly as we could, from the first day of the Hexæmeron to near the close of the sixth day, and having prepared the way for the discussion of the *several creations of man*, we recur to the history of his formation as given by Moses, and resume it in the next chapter.

CHAPTER IX.

ADAM AND HIS DOMINION.

"And God (Elohim) said, Let us make man in our own image, (that is, mankind,) after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every thing that creepeth upon the earth."

OBSERVE, man was not created in the likeness of "Jehovah," but of "Elohim." Jehovah has no likeness; He is a spirit, and has no image. The likeness was of our Saviour, of the Lord *without whom nothing was made;* the likeness of the image He had taken upon Himself before the world was: "Sacrifice and offering thou wouldst not, but a body thou hast prepared for me." (Heb. x. 5.) "*So God created man in his own image: male and female created he them.*"

"And God blessed them, and said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth on the face of the earth. And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the

earth, *and every tree in which is the fruit of a tree yielding seed; to you it shall be for meat.*" Those commandments and privileges are very plain and precise. The dominion *of this creation* of mankind was unlimited—was universal—their power extended over "every thing that moveth upon the earth." There was no limitation as to food; they were given "*every tree in which is the fruit of a tree yielding seed; to you it shall be for meat.*" They were not limited to any particular place wherein to live; they *might roam over the whole earth; they were to replenish and subdue it.* That was their privilege, as well as the duty imposed upon them—upon mankind, *male and female*, of the first chapter in Genesis.

And evening was and morning was the sixth day.

This closes the events of the sixth day. In the first chapter of Genesis, containing the revealed account of the creation of the heavens and the earth, and of all animal life, including mankind, *male and female* generally,* *Palœolithic*, *Neolithic*, and *Adamic*, they had their dominion defined.

We turn now to the second chapter. This commences with a kind of retrospect, in which it is declared that the work of the creation of the heavens and earth is finished, and that such were

* The word man signifies "*red earth;*" of such was common man or mankind created. The words Eth H. Adam signify the special Adam—the particular Adam—the Adam of which the Prophet was then speaking.

the generations of the heavens and the earth *in the day* that the Lord made them. Recurrence is then made back to the third day of the Hexæmeron—to the time before there was rain upon the earth—no man to till the ground; when the earth was in that steamy foggy state that it was only watered by condensed mist. Moses then comes to the main subject of his writings—to the detail of the creation of the *Eth H. Adam*, the particular Adam from whence Noah, and subsequently the Israelitish nation, had sprung. In doing this he is obliged to recur back to the first chapter of Genesis—to the sixth day—to repeat the description he has given, from what had been revealed to him, of the creation of man—that is, of our Adam—formed of the dust of the ground, or Adam's land, to whom alone his history thenceforth altogether refers. For instance, God formed this man (the special Adam) "*of the dust of the ground;*" (of H. Adama;) that is, the ground of Adam's land. He "breathed into his nostrils the breath of life." "And man (the Eth H. Adam) became a living soul." In the creation of the first races of mankind, it is not stated "*that they were made out* of the ground;" (meaning H. H. Adama;) "nor *that the breath of life was breathed into their nostrils;*" nor that they *became* "*living souls.*" So far, here are clear distinctions drawn between the first creations of mankind and that of Eth H. Adam of the second chapter. The Prophet then states the

creation of Adam and Eve, (to which we shall have to refer more particularly hereafter,) and gives their traditional history.

The Mosaic record thenceforward relates chiefly and almost exclusively to that family, and to their direct descendants, and is silent on the general subject of the other races of mankind—the Palœolithic and Neolithic man.

Much difficulty and misapprehension appear to have been caused by, or to have arisen from, the blending together of those two chapters, and by deeming the early races of mankind, whose origin could only have been known by revelation, to be identical with the later creation of Adam and Eve, whose history could at that time have been easily ascertained and traced by tradition.

If we confound man or mankind, "*male and female*" of the first chapter, with the single individual (the Eth H. Adam, or special Adam) of the second, we shall find ourselves involved in numerous difficulties, and have to contend with many apparent discrepancies, with contradictions seemingly inexplicable. These have already been unfairly used, for the purpose of throwing discredit on the whole Mosaic record. A knowledge of the creation of the world and the origin of mankind could manifestly be attained only by revelation; a knowledge of the history of Adam might have been received by tradition. If we accept the revelation contained in the first chapter as a slight

outline of the works of creation, and of mankind generally, afforded to man by the Almighty, and receive the account of the second chapter as partly traditional history, relating chiefly to the individuals, Adam and Eve, all seeming discrepancies and disagreements between the two chapters are dispelled, and their respective accounts reconciled with geological facts.

Before entering on the consideration of the presumed discrepancies respecting the creation of man, there is the preliminary difficulty of the six days of the creation to be disposed of, "For in six days the Lord made heaven and earth." From what we have already written of the six days it must be obvious that they are days of the Almighty, not of man, six great cycles. There are many passages in the Holy Scriptures where it is manifest the days of God are not the days of man. Some are mentioned as days of years, others as long eons of time; for instance, "These are the generations of the heavens and the earth," "When they were created *in the day* that the Lord God made the earth and the heavens." Daniel's vision of *the evening and the morning* embraced two thousand three hundred days, &c.

Hugh Miller, in his "Testimony of the Rocks," has beautifully illustrated the suggested visions of Moses, graphically describing them as the rising and falling of a curtain six several times. At each time the earth appeared in a more advanced

stage. Of the six glimpses given to Moses, he faithfully recorded what he had seen; and after the lapse of some thousand years, since the record was written, geology comes to confirm the truthfulness and accuracy of the revelation.

Accepting the explanation of Hugh Miller, also the previous description of the works and great duration of each of the six days, the Mosaic account will be found to be perfectly consistent with geological facts.

In page 174 of "The Testimony of the Rocks," Miller declares that, the sublime panorama of creation, as exhibited to Moses, being *rightly understood*, he knew of no single scientific truth that militated against even the minutest or least prominent of its details.

Since that book was written, many fresh geological discoveries have been made, and evidence adduced to show the existence of Palœolithic and Neolithic man upon the earth, as already stated, at periods long prior to the date assigned to the creation of Adam.

Pursuing the subject, and tracing geological facts step by step with the Mosaic account, the creation of pre-Adamite man appears to have been distinctly set forth in the first chapter of Genesis.

The second chapter records the particulars of another creation of man, that of the special Adam (of our Adam.)

"And the Lord God formed *man* [the special

Adam,] of the *dust of the ground*, [that is, the dust of H. Adama, or Adam's ground,] and *breathed* into his *nostrils* the *breath of life, and man* [the Eth. H. Adam,] *became a living soul.* And the Lord God *planted a garden eastward in Eden*, and there he put the man [the Eth. H. Adam] whom he had formed, and out of the ground [the H. Adama or Adam's land] he made to grow every tree that is pleasant to the sight and good for food; the tree of life also in the midst of the garden. And the Lord God took the man, [the Eth. H. Adam,] and put him into the garden of Eden, to *dress it and keep it.*" Adam had permission to eat freely of every tree in the garden, save one: "Thou shalt not eat it, for in the day thou eatest thereof, thou shalt surely die," [that is, spiritually, his living soul should die.] "And out of *the ground* [out of the H. *Adama*] God formed every *beast of the field*, and *every fowl of the air*, and brought them to Adam to see what he would call them." That was another creation of animals, made specially for Adam. These were not the wild cattle and beasts of the *earth*, such as those created out of the *earth*, (Eretz,) which were then numerous, and mentioned in the first chapter, but were another and totally different creation, formed out of the ground of Adam's own land, and created specially for his use.

There are four different kinds of beasts mentioned in the first and second chapter of Genesis:

Khayuth, (or wild cattle,) Kayuth H. *Eretz*, (wild beasts of the *earth*,) Behemoth, (tame cattle,) Kayuth ha Sodeh. Beasts of the field capable of being domesticated, were those now specially formed for Adam. But for Adam (the Eth. H. Adam) there was not *found* an help *meet* for him. As Adam's was a special and superior creation, there were none among the women of the former creations equal to him, or a fit help "meet" for him, or dwelling in that country, and therefore was Eve specially created for him, It is not stated how long Adam remained in the garden alone—it must have been for a number of years. It was aft e Adam had been put into the garden that his fruit trees were "made to grow," it was afterwards that the beasts of the field, and fowls of the air were formed out of the ground of Adam's land for his use. These were totally different creations from the wild animals which had previously been formed out of the earth, ("Eretz,") mentioned in the first chapter. These latter were made specially for Adam, made after his own creation, made out of his own ground, the ground of H. Adama; they were tame beasts, beasts of the field, and to them Adam gave names.

"And the Lord God said, It is not good that man should be alone, I will make an help meet for him." . . . . verse 21.

"*And the Lord God caused a deep sleep to fall upon Adam, and he slept.*" When Adam was awake, he

was conscious of what was passing before his eyes, but when he was in a deep sleep he must have been utterly unconscious. When he awakened, *God brought Eve unto the man.* To account for her appearance, Adam thought she was taken out of his side as he slept; he may have dreamed this, or it may have been true, but the Almighty may not have thought proper to instruct Adam of the mode of her creation, and so have left him to his own device.

It is evident that Adam (whether he had dreamed it or not) thought Eve had been made from one of his ribs, from what follows:—(twenty-third verse.) "And Adam said, This is now bone of my bone, and flesh of my flesh: she shall be called woman," (Isha,) because she was taken out of the special man (Ish.)

We are not told how long Adam was left alone in the garden. We gain probable conjectural evidence of the time in a circuitous manner. Adam was one hundred and thirty years old when Seth was born. Seth was given to him to replace Abel—Seth whose name signifies "the appointed." Here we have only an outer boundary; how much short of that time Adam remained in the garden alone is the difficulty. It might have been a hundred years. It is possible that Eve may have been provided for him, that Cain and Abel might have grown to manhood, that Abel might have been murdered, and Seth born, all within a period

of thirty years. This would still leave us one hundred years within which Adam may have lived alone in the garden, before the creation of Eve. It is an outside limit to allow; the conjecture *is not satisfactory*, and the time may have been much less. Adam may have had daughters intermediately between his sons. We must now turn back to the first chapter, and enquire after the other creations of man, "*male and female.*" We shall find them totally distinct from the Eth. H. Adam—the Adam of the garden—their destinations, occupations, and employments completely different, and at variance. As to the creations of the first chapter, "*Male and female created He them.* And God blessed them, and said unto them, Be *fruitful*, and *multiply*, and *replenish* the earth, and *subdue it*, and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the *earth.*" ("Eretz.") "And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth (Eretz,) and every tree, in which is the fruit of a tree yielding seed; to you it shall be for meat." This would apply to Palœolithic, as well as to Neolithic man. Compare these creations with that of Adam, you will find them totally variant and antagonistic. Their occupations were not to be the same, their destinies were contrary—neither could have fulfilled the duties of the other. Eve had not then been created, and

Adam could not by himself have multiplied and replenished the earth. Adam was not commanded nor empowered "*to subdue the earth,*" *nor to have dominion over every living thing that moveth on the earth.* He was not given every herb on the face of the earth (Eretz) for food. He was not given for meat the fruit of every tree yielding seed. He was only given those within the garden, within Adam's land (H. Adama,) even of those there was a reservation, with a severe and lasting penalty attached for infringement. He was to remain within the garden "*where he was put,*" and not to roam over the whole earth and subdue it, as were the other creations, male and female. His duty was to dress and keep it, to be agricultural, and pastoral, and to live in communion with God. He did not obey the injunction to be fruitful and multiply, and replenish the earth, which had not in fact been given to him. He had only two sons, and when deprived of one by murder, he had only one other supplied to him in the place; therefore he did not multiply. The words, "*male and female*" in the first chapter, have a much more extended signification than is generally attributed to them. From childhood we have been brought up with the firm conviction that there were only two of mankind created—that they were the male and female above mentioned—that all mankind were descended from those two. It is now difficult to divest ourselves of that conviction—to know

and feel that the man (Eth. H. Adam) made out of the dust of H. Adama, and in the image of God, was one creation, that he did not multiply so as to fulfil God's command—that the male and female of the first chapter were other creations, and their numbers indefinite. We can scarcely bring ourselves to think of them as more than the two individuals, Adam and Eve of the second chapter. Suppose it had been written of fish, "*male and female created He them*," would any one for an instant suppose that by this was meant the creation of only two fish—would not thousands immediately arise before the mind—would not the waters, according to the language of Scripture, appear to have brought forth abundantly? Apply the same kind of mental vision to the formation of mankind, and it will be apparent the words convey the idea of infinite numbers, differing in make, in shape, size, and color, and diverse, as they are to be found at the present day, not all formed at the same time, as we have already seen to have been abundantly proved—not all allocated to the same country, but placed in several suitable centres, agreeable to their severally constituted frames, from whence they might radiate over the whole earth, and obey the divine command, *to be fruitful and multiply*, and replenish it, and exercise dominion over everything that moves upon its face.

From finding these creations of "male and

female" placed in the Bible in the previous chapter to the creation of the Eth. H. Adam, one would be led to suppose that their formation was at the same time as that of Adam. Moses does not say so. He does not state in what part of the sixth day *they* were created, nor that *they* were all created at the same time. Judging from analogy—from the creations of the several other formations which we have before traced through their different strata, to the depth of one hundred and thirty two thousand feet, and upwards, formed evidently through cycles of millions of years—we naturally come to the conclusion that these many creations of "male and female" were formed from time to time, like those of fish and land animals, as the several sections of the land and sea, were fitted for and prepared to receive them. Of this we may be the more fully convinced, from the results of geological research, which have discovered the traces of man, both Palæolithic and Neolithic as before stated, far back into pre-Adamite times, into post-Pliocene formations, and into different countries far apart, showing the widespread localities of the human race over the face of the earth, long before the days of Adam. There is even some evidence of their having been traced into the Pliocene. The mildness of the climate at the close of the Pliocene period having been most likely similar to our own at the present day, would render their inhabiting the earth at

that time highly probable, and their is nothing in geology or in the Bible antagonistic to such a fact, but many circumstances to render it probable.

CAIN AND HIS DESCENDANTS.

The special Adam having disobeyed the command of the Lord, the ground was cursed for his sake. He was condemned thenceforward to eat his bread in the sweat of his brow, instead of having his food grown to his hand without labour. He was driven forth from the garden to till the ground (the H. Adama) out of which he had been formed. His children, also, were condemned to labour—Cain to an agricultural and Abel to a pastoral life. The seed of evil sown in disobedience culminated in blood—Cain rose up against Abel and slew him. The Lord pronounced his doom—"Now art thou cursed *from the earth*," &c. (from Adam's land.) "A fugitive and a vagabond shalt thou be in the earth" (Eretz.) "Cain said unto the Lord, My punishment is greater than I can bear. Behold, thou hast driven me out this day from the face of the earth, (the H. Adama,) and from thy face shall I be hid; and I shall be a fugitive and a vagabond in the earth; (Eretz;) and it shall come to pass that every one that findeth me shall slay me." Here is a remarkable passage, and proves that there were then other inhabitants on the earth besides Adam, Eve, and Cain. Who

was there for him to be afraid of? Not of Adam or of Eve! He was not afraid of them; he was not afraid to live with them in Eden, his father's own ground, the H. Adama, out of which his father was made—where he himself was born, and wherein he had until then employed himself in tilling the ground. He was afraid to go out of Adam's ground into the outer world—the earth (Eretz)—because he was afraid of the inhabitants thereof; that they should meet with him and slay him. Before he went, the Lord, admitting his plea, provided for his protection by setting a mark upon him, "lest any finding him should kill him!!" thus proving not only that Cain's fears were well founded, but that God, seeing the justice of his apprehensions, prepared him against such an event.

"*And Cain went out from the presence of the Lord;*" that is, out of Eden (or H. Adama, Adam's land)—went out into the wide world, (Eretz,) and "dwelt in the land of Nod, in the east of Eden." The land of *Nod*, or of *Nood*, means the land of the wild hunters—the people he feared to encounter—descendants of some of the other creations, male and female, to whom dominion had been given over *all the earth;* (Eretz;) the people who could roam where they liked—eat what they liked—to whom there was no restriction, as there was to the E. H. Adam, who had his place of residence appointed for him, and his occupation in the tilling

of the ground; not so the people of the Palœolithic and Neolithic implements, whose ancestors had fought with the last of extinct animals. Cain found favour among these wandering hunters; the mark put upon him by the Almighty protected him. He carried with him the commanding intellect of a superior race; the savages submitted to his control—gave him one of their daughters to wife. He partly reclaimed them from their wandering life; formed them into a more civilized community, and, with their assistance, built a city. We hear but little more of Cain and his descendants in Holy Writ, and that little is not good.

In it we come upon fresh traces of blood. Lamech gathers his women around him, and confides to them the secret that he was a murderer. Of his sons, the historian makes mention of Jabal, Jubal, and Tubal-cain, and gives their occupations. Slight as the notice was, it affords us a glimpse of the progress then made in sciences and arts amongst the wild hunters. Jabal was "the *father* of such as dwell in tents, and have cattle." The covering of tents would indicate the manufacture of textile fabrics—the domestication of cattle, progress in civilization. Jubal was "the father of all such as handle the harp and organ." The making of these instruments, and the performance upon them, show advances in the fine arts among a people who had been wandering wild hunters only a few generations back. The occupa-

tion of Tubal-cain, "an instructor of every artificer in brass and iron," proves the existence of the knowledge and use of metals at that early age. It is not stated that Tubal-cain was the father or inventor of the use of metals, as it was of Jubal, that he was the father of all such as handle the harp and organ. Tubal-cain was only an instructor of artificers, and may have derived—and most likely did obtain—the art from his predecessors, inhabitants of the outer world, outside the boundaries of Adam's ground, other inhabitants of the earth, (Eretz,) the land of the wandering hunters or nomadic race—descendants, probably, of the Neolithic tribes, who were acquainted with the use of bronze.*

SETH AND HIS DESCENDANTS.

We return to the history of the more favoured branch of the Adam—of Seth (meaning the appointed)—favoured because "they walked with God"—until the days of Enoch, whom "God took;" so steadfast was their devotion to their Maker, that they were called "the children of God."

At length there came a change: they succumbed to the blandishments of the daughters of Cain. Moses describes this falling off in terse but forcible language—Gen. vi. 2—"*And the sons of God saw the daughters of men that they were fair, and they took*

* See Geike's "Great Ice Age."

wives of all which they chose.". The word translated *wives* should be more properly *women.* Moses is describing the general depravity of the race of the Adam. The next verse strongly depicts the unbridled licentiousness and general unchastity of the females of the mixed race of Cain, with whom the Sethites became entangled; but the force of the description is lost by mistranslating the word *nephilim* into *giants;* it means *fallen women;* and should have been thus rendered—"And the *women* of those days were *fallen ones.*" They were corrupt as the men, and therefore were justly involved in the catastrophe of the flood. (Genes. vi. 4.) "Nevertheless death reigned from Adam to Moses, even over them who had not sinned after the similitude of Adam's transgression." (Rom. v. 14.)

It is evident there were others on the earth who were not of Adam's race, and who had not sinned in like manner.

NOAH.

God, then, finding that the earth was corrupted and filled with violence, that is, the race of the special Adam dwelling on the earth, (for by this time the children of the special Adam had commingled with the inhabitants of the outer earth, the progeny of Cain,) it repented the Lord (Gen. vi. 6) that He had made the special Adam—"I will destroy man (*the special Adam*) whom I have created from the face of H. Adama." But Noah, having found grace in His sight, God gave direc-

tions to him to prepare the Ark—instructions as to its length, breadth, and height, and who and what he was to take into it—himself and wife, his sons and their wives, fowl and cattle after their kind, (tame cattle; not wild.)

Much time and calculations have been wasted—some to prove that the Ark could not have contained two and two of all kinds of beasts and birds that were on the whole earth, (Eretz,) others, to show that it could. The solution is very simple. The beasts and fowl were only those of the H. Adama, or Adam's ground—those which had been made specially for Adam out of the ground of Adam-land, and brought to him in the garden to be named—those which he had domesticated. For these there was room enough in the Ark, but not for those on the whole face of the outer world, (of the Eretz.) Those which were wild would have been useless and dangerous to Noah and his posterity. He could not by any possibility have collected them together, nor have housed nor fed them.

The 21st and 22nd verses of the 7th chaper of Genesis are, in the original, full of important meanings. Several of the niceties of the ancient language are lost in the translation. The 21st verse of that chapter, rendered literally, would read, "All flesh wasted away that trod upon the Adam-ground (the H. Adam,) both of fowl, and of the *tame* cattle, and of wild beasts, and of

every creeping thing, and of every H. Adam (implying every one of the race of *the* special Adam.) The twenty-second verse contains the statement as to the H. Adam, "all in whose nostrils was the breath of life, all that was in the *dry land* died, or. according to other translation, '*wasted away.*'" This would prove that *all* were not in the flood. That it was limited to a certain locality, (to Adam's land, and probably to the land ofNod,) and to the destruction of the *race of H. Adam*, and to those of Cain's descendants, who had mingled with them in Adam's land. It also appears to indicate it was the race which had received the gift of spiritual life in *their nostrils*, that was then destroyed by the flood, as contradistinguished from the savage—"I will destroy the *Eth. H. Adam* from the face *of the H. Adama.*"

"The same day were all the great fountains of the deep broken up, and all the windows of the heavens were opened." What a graphic description of the commencement of the Noachian deluge.

THE DELUGE.

The flood, it may be presumed, was the result of combined action of the heavy rain—of the subsidence of the land through volcanic agency—of the rushing in of the waters of the ocean—of a great tempest, and of a succession of immense waves, rushing in from the Indian Ocean through the Persian Gulf, up the valley of the Euphrates,

with like effect as has lately occurred on the South American coasts.

The effects of the rain must have been inconsiderable in causing such a deluge, except so far as it assisted by filling the rivers, and by their rushing down off the mountains, and inundating the low lands, as they have recently done in several countries in Europe.

The waters of the ocean are a fixed quantity, they do not increase or diminish to any appreciable extent, they maintain an equable level; but that of the land is always fluctuating. Here upheaving, there subsiding, what was at one time a mountain range may have become the bottom of the deep. Great Britain, more than once united to the continent, has now become isolated with a great sea rolling between. The eastern coasts of England are slowly subsiding, whilst a gradual upheaval is raising the coasts of Sweden and Norway. Geologists tell us that Greece and Italy were formerly united to Africa, and that the Grecian Isles are but the tops of the former terrain.

The island of Santorin is all that now remains above water of a great volcanic mountain; and the rude stones of the buildings of a pre-historic race, buried beneath masses of scoria and ashes, to the depth of one hundred and fifty feet, with granaries, oil presses, ornamental vases, and other manufactured articles, testify to the ancient civili-

zation of the inhabitants of Theresia. Subsidings and upheavals of parts of the crusts of the earth have been always occurring since the fiat went forth, "Let the waters under the heavens be gathered together into one place, and let the dry land appear."

The Garden of Eden (or Adam's land) was in a volcanic country. Sodom, Gomorah, and other cities of the plain were swallowed up; and the territory whereon they once stood subsided, leaving the surface of the Dead Sea one thousand three hundred feet lower than the level of the ocean. Some such submergence, occurring in the valley of the Euphrates, and in Adam's land, succeeded by a re-emergence, would have produced all phenomena which accompanied the Noachian deluge, or some such deluge as has lately accompanied the tempest, driving over the South American coasts, would have had like effect. That it was merely local must have been well known to the inhabitants of the unflooded countries around. Noah, after he had descended from the Ark, must have known how far the flood had extended. He soon got into a land where the inhabitants were idolators, perhaps the mixed descendants of Cain.

The Almighty declared His intention of destroying the Eth. H. Adam, the special race of Adam, off the face of H. Adama. To do this, there was no occasion to overstep or set aside His

natural laws. They were quite sufficient for the purpose. When Noah looked forth from the window of the Ark, and saw around, so far as the eye could reach, "a waste of waters," and no land visible of the H. Adama or Adam's ground, he would naturally conclude, that the tops of the highest hills (which perhaps were not very high in Adam's land) were covered. What are we told in the twentieth verse, seventh chapter, "That *fifteen cubits upwards* did the waters prevail," and the mountains were covered. We may take it, that fifteen cubits, or about twenty-seven feet, was the depth of the water over the land where Noah had resided. Some have thought that fifteen cubits was the height of the waters over the tops of the highest mountains of the earth. Nothing is impossible to the Almighty, yet to have raised so vast a body of water would have been such an unnecessary infringement upon His immutable laws, that the mind cannot be brought to accede to it. The waters of the ocean being a fixed quantity, neither increasing from the perpetual rolling into it of all the great rivers of the earth, nor diminishing from the unceasing amount of evaporation, equilibrium being maintained by the waters withdrawn from the earth, and ocean being as constantly restored to them in the form of rain, ice, and snow. What would have been the derangement of the laws of nature had the amount in bulk of ten or twenty oceans, each as

voluminous as our present, been suddenly created and cast upon the earth, sufficient to cover the *tops* of the highest mountains to the depth of fifteen cubits, upwards? With what object? For the purpose of destroying the inhabitants of a small piece of land allotted to Adam, (a mere speck upon the surface of the earth,)—inhabitants living a distance from great and inaccessible snow—covered mountains, where the foot of man had never trodden. The laws of nature did not provide such a mass of waters. Ere being cast upon the earth they must have been specially created for the occasion, and then withdrawn into space, they could not have been absorbed by the earth.*

Such copious and needless masses of water extending over the whole surface of the earth (on the greater portion whereof *man was not*) would be unlike the workings of the great plan of the Almighty for the gradual calling forth from chaos of a habitable globe. That great operation,

* It is to be observed, that the terms, the whole earth, and all the earth, have in many instances a limited signification, and only apply to a part of the land. Mr. Crofton, in his "Genesis and Geology," quotes several instances of such limited signification, where the Hebrew words signifying either earth or land, are indiscriminately applied, and yet that in some instances the terms whole earth, or whole land mean some, only the land of Palestine, others the Babylonian empire, and soforth, so that when it is stated, the whole earth was drowned by a flood, that means but the part then inhabited by Noah and the tribes connected with him, who had breath of life breathed into their nostrils. At that time a great portion of the earth must have been un-inhabited.

though requiring millions of years for progress and completion, only covered part of the northern hemisphere with the sea, to the depth of from three thousand to four thousand feet. It was totally different in character and conception from the deluge, a flood only continuing its submergence to the depth of fifteen cubits, for a period of one hundred and fifty days, according to the Mosaic account.

"The conception of absolute fixity of physical law is one which the progress of science has made axiomatic. Belief in an all-comprehending Intelligence, which *saw 'the end from the beginning,' and determined beforehand*" the history of every inorganic atom, and the evolution of each sentient structure is a postulate of rational theology; and that in the guidance of the universe, its great Superintendent acts according o laws "set up from everlasting," is no less axiomatic. To have covered the highest mountains of the earth, for the purpose of destroying the inhabitants of a limited district, would have required, as before stated, waters to the depth of nearly forty thousand feet. This would have been needless, and in contravention of the invariable laws of the Almighty. A flood did take place, a great flood. The Noachian deluge was a miracle. That it would occur, had been communicated to Noah one hundred and twenty years before the event—one hundred and twenty years was he occupied in

making preparation, building and constructing his ark. When the flood took place, the means were proportioned to the end.

EXTENT OF THE DELUGE.

It has been argued that the flood was universal. The finding of sea-shells at a height of from one thousand five hundred to two thousand feet on the tops and sides of mountains—the boulder stones, clays, sands, and gravels of the drift, deposited in ridges by currents of waters on the assuaging of the flood, were adduced by a learned Divine (in an able work) as unquestionable evidence that the earth had been all overwhelmed by the waters of the ocean, about five thousand years ago. It is admitted, that the northern portions of Europe, Asia, and America had been invaded by the ocean, and buried beneath its waters, or bound up in snow and ice to the above extent. But when was that? At the wane of the last great glacial epoch, and after several interglaciary periods, occurring thousands of years before Noah was born, or Adam created. That flooding was produced by natural and astronomical causes operating gradually through many and multiplied ages of time.

Great portions of the northern and southern hemispheres were alternately covered with snow and ice, extending beyond the fortieth degree of north and south latitudes; the crust of the earth

contracting by the intensity of cold, became submerged, and the waters of the ocean flowed over, bearing with them great fields of ice and icebergs. On the decline of the glacial epoch, and return of subtropical heat, the contracted earth again expanded. The waters retreated, the snows melted, leaving behind them long trains of striated stones and till of the glaciers, with boulder-stones, sands, gravels, drift, and boulder-clays of the icebergs, as before described. Such phenomena having recurred at long intervals, during the six great periods of the Hexæmeron, prove them to have been part of a series of pre-arrangements, adjusted to each other with the completest mastery of all possible emergencies.

At the Noachian deluge, only that portion of the earth inhabited by Noah and the other descendants of Adam, viz., Adam's ground, and the land of Nod, was overwhelmed, "*and fifteen cubits upwards did the waters prevail.*" The subsidence of Adam's land to the extent of fifteen cubits, as has frequently happened to other parts of the crust of the earth, would have been sufficient to have destroyed all the inhabitants of that limited district, and the requirement of the bulk of many oceans to cover the whole earth to the depth of upwards of thirty thousand feet was quite unnecessary.

Such occurrences as the deluge, or the overflowing of limited districts, have often happened. The flood of Ogyges, for instance, or that of Deu-

calion and Pyrrha. This latter, occurring five hundred years later than the Noachian, cannot be confounded with it.

Noah may have lived upon a sea-coast, and probably among a seafaring people, who understood the building of vessels. That the Ark was built beside the water, and not inland, may be inferred from the Chaldean account of the deluge, written on terra-cotta tablets in the cuneiform characters, lately brought before the public by Mr. George Smith, in his Chaldean account of Genesis. These were found amongst the series of tablets excavated by Sir Henry Rawlinson and Mr. Smith, from the site of the Royal Palace of Nineveh. The original inscriptions had been made at Erek, and copies transferred from thence, and deposited among the archives of the Babylonian kingdom at Nineveh.

The fragments of the tablets, so far as they can be made out, tend to corroborate the Mosaic account; but, being fragments, are of course imperfect—broken sometimes in the most interesting parts. There are differences, such as might be expected from the circumstances attendant on the history of the respective accounts. The Mosaic acocunt of the flood came to Moses through the tradition of probably nine hundred centuries, permeating through different dialects and languages; therefore, liable to the fate of all traditional lore. The Chaldean account is

supposed to have been preserved by Isdubah, or Nimrod (the builder of Erek, and founder of the Babylonian kingdom.) From the Chaldean account of Genesis, it would appear that the Chaldeans had some vague idea of the creation of the earth, the chaos, the deep, the appearance of the dry land, the formation of two great lights in the firmament, and the creation of animals, then of man. But as I have already mentioned, man of himself could have known nothing of the creation of the earth, nor of himself, had it not been revealed to him. We do not find that it was to Adam. It is not likely that it would have been revealed to the Chaldeans, who were idolaters, and did not acknowledge the power of the Almighty or know Him by name. The greatest likelihood is, that when Assurbampal had all the early traditions collected and transfered to Nineveh, and there transcribed, his scribes got hold of the Mosaic account of the creation, and extracted from thence as much as suited their purpose. This was about 855 B.C., and 200 years after the time of Moses.

The description of the building of the Ark is imperfect, several lines of the tablet being lost at that part. Of the remaining we collect some facts, such as, that the "circuit of the Ark was fourteen measures; its sides fourteen measures." When the Ark was completed, Noah made six or seven trial trips into the *restless deep*, to ascertain if his vessel were water-tight This, if true, proves the

scene of the building to have been on the sea-coast. He gave it three coatings of bitumen without and three within, to counteract the gaping of the seams. This agrees with the Mosaic account. He placed in the Ark his treasures of silver and gold. (Though this fact is not mentioned in our account, yet it carries with it a great air of probability, and is quite in accordance with human nature even to the present day.) "The seed of life, all *he possessed*, he collected," (being, most likely, wheat and other grain, olive, dates, grapes, and such other useful seeds as were known to him.) He entered, "with all his male and female servants, and the *beasts of the field*, and the *animals of the field*, and the sons of the Army" (probably his own sons.) It is remarkable, as before stated, that in the detail of the creations of the sixth day, there is a distinction drawn between *beasts of the earth*, wild beasts, and *cattle*, most likely such as were to be tame or domestic. Again, it was *the beasts of the field* which were brought to Adam to name in the garden of Eden. *It was beasts of the field*, or domestic, he took into the Ark (may have been his own domestic animals.) There is then a glowing description of the flood, commencing by a tempest, which it is unnecessary to follow farther, as the account seems to have been altered by the scribes, to suit the tastes of the king and his people. They chose to magnify the power and might of their gods, by ascribing to them the

work of the Almighty. The sending forth of the birds is then described, and the return of the dove, and the disappearance of the raven, another testimony in the tablets (if reliable) to the limited extent of the flood. In the Mosaic account, we may recollect, there is a covenant entered into by the Almighty with Noah, and not only with the animals that were in the Ark, but with those also which were not in the Ark, (wild,) (Khayoh,) a farther proof that all the animals on the earth were not destroyed; the destruction only fell upon those *made out of the earth of Adam's land*, created tame or tameable for his use, also probably those in the land of Nod.

When the Lord commanded Noah to bring forth out of the Ark all flesh, both of fowl and "cattle," no mention is made of *wild beasts;* and in the tenth verse of the ninth chapter of Genesis, when a covenant is established with Noah, and with the cattle, and every beast *of the earth that is with you*, from all that go out of the Ark *to every beast of the earth*, in our version, tenth verse of the ninth Genesis, it would read as if there were beasts of the earth, or wild beasts, in the Ark. There is a slight variance between it and the original Hebrew, the substance of which appears to be—I establish my covenant with you, (ver. 12,) and with every living creature; that which is with you, with fowl and cattle, as well those with you, from all that go out of the Ark down to every *beast of the earth.* Here

it clearly appears that there were beasts of the earth not within the Ark, and that the covenant extended to them as well as to those within the Ark. This of itself would show that the flood was not universal.

The conclusion to which Mr. Smith came was, that the events related in the Bible and those in the inscription were the same, and occurred in the same order; but the minor differences in the details showed that the inscriptions embodied a distinct and independent tradition. He also observed, that in spite of the striking similarity of style, the two narratives belonged to totally distinct peoples. On the subject of tradition, and of the variance which would naturally arise between the same statement of facts handed down traditionally through two several channels, it would be well illustrated by an amusing experiment tried by the late Archbishop Whately. His lordship (who placed no reliance on tradition) put it practically to the test at his dinner-table, where a number of clergy were assembled. He sent a message round, communicating it, "sotto voce," to the nearest guest on his left hand. This gentleman whispered the message to his next neighbour. By the time it had gone the round of the table, and reached the right hand of His Grace, the clergyman there, delivering the message as it came round, the message had been so mutilated, in merely going the round of the dinner-table, as to be quite unintelligible.

When Abraham went down to Egypt to buy corn, he found himself in a country governed by the Pharaohs; a country far advanced in civilization, as appeared by their buildings, their statues, their obelisks, their hieroglyphic writings, and all the appliances of an ancient and long civilized country. Perhaps he knew more of their ancient history than we do at the present day. He might have been aware that, for many centuries, their government had been hierarchical; that it had been handed down from one set of the priesthood to another; that this form of government had been put an end to by Menes, who ascended the throne as the first king of Egypt, in the year 2320 B.C.; that during his reign were erected great temples, and obelisks, and statues of sphinxes, and gorgeous tombs; that the histories of the interred were sculptured upon their sepulchres, their sarcophagi carved out of porphyry, and their monuments to the dead of a most costly and durable description; that their nobles were clad in purple and fine linen, and had all the manners and customs of a people of ancient civilization. He may have known that the time at which Menes ascended the throne was only about twenty-eight years after the flood of Noah, a circumstance which of itself would have negatived the idea of a universal deluge; he must have known that it had never reached Egypt, and that the Egyptians had escaped the destruction which fell upon the inhabitants of Adam's land.

In "*Recent Speculations on Primeval Man*," by the Duke of Argyle, His Grace remarks, "*The founding of a monarchy is not the beginning of a race.*" Speaking of the foundation of the Egyptian monarchy, he says, Mr. R. Stewart Poole, of the British Museum, had calculated that it had commenced seven hundred years before the time of Abraham. "It was," says His Grace, "the habit of the Egyptians to record all events in the form of pictorial representation. In one of the most perfect of the paintings preserved to us, the negro kneels at the feet of Sethos the First, in the same attitude of bondage and submission which typifies the enduring servitude of this race. The blackness of colour, the woolliness of the hair, the flatness of the nose, the projection of the lips—all these had been fully established and developed thus early in the history of the world, and that was more than three thousand two hundred years ago." That His Grace had also been informed (through the kindness of Mr. Poole) that there are still some earlier representations of the negro, relative to the twelfth dynasty, or about one thousand nine hundred years before Christ—also mention is made, in hieroglyphic writings, that at a period at least two thousand years before Christ, of black or negro troops being raised by an Egyptian king, to assist him in the prosecution of a great war. He adds, "Since the negro race was already in the days of Abraham just what it is now—what is the time

we must allow for the development of this variety of man, supposing it to have descended from a common stock? Again, we have no absolute proof, that a change from white to negro blackness is possible at all." In the same paper, the Duke observes, that the existence in the days of Abraham of such an organized government as that of Chedorlaomer, shows that two thousand years before Christ there flourished in Elam a nation which *even now would be ranked among the Great Powers.* When Ham or Chem (son of Ham, and grandson of Noah) settled in Egypt, he also must have been aware that he as an immigrant came amongst an ancient people, who had not experienced the calamity of the flood. Neither he nor Abraham were likely aware that before they were born the great Empire of China had its existence—that its millions of inhabitants were governed by emperors, who knew nothing of the inhabitants of Adam's land, nor of their sufferings in the flood.

Before Yaou Ti ascended the throne of China, he had been preceded by twelve emperors, whose names are given in Chinese history. Connected with them, the accounts of their Divine origin, and the mighty acts attributed to them, are no doubt mythical, yet they are no more so than those interwoven with the early histories of all ancient kingdoms, whose inhabitants generally exaggerated the acts of their ancestors. With the Emperor Yaou Ti, the first Chinese real his-

torical cycle begins, and from him the earliest Chinese Historic Annals are dated. He appointed astronomers, regulated the calendar, added the intercalary months. He instituted land taxes, and placed duties on several commodities and articles of the greatest luxury—articles which are only found amongst the most civilized nations, and yet his reign commenced only eleven years after the Noachian deluge!* The manufacture of silk was carried on in this reign, and the robes of state of the Empress were of that fabric. His empire was of vast extent; it would in those days have occupied a nation ages to migrate from Adam's land to the Chinese capital, even had it been then possible to do so. As to the few of the sons of Shem, Ham, or Japhet undertaking such a journey without beasts of burden, without guides, without wells and water on the road, without knowing whither they were bound, nor any rational reason for their migration, the idea is absurd; and when we consider the difficulties the army of a great nation, with all appliances "and means to boot," had lately to encounter in going to Kivah, (a portion of the way,) we must pronounce such an undertaking utterly impossible in the time of the early descendants of Noah.

I have dwelt long on the subject of the flood; but it is important to the purpose of this paper to

* Guttislaff: vol. i.

show that the deluge was merely local, its universality would be contradictory to the theory of there being any descendants of pre-Adamite man as yet in existence on the earth. About these see farther on—Mr. Pritchard's account of the several races of man.

CHAPTER X.

THE TWO COSMOGONIES.

HAVING closed the history of the creation and of mankind, as revealed to him in the first chapter of Genesis, as previously stated, and having given in the first six verses of the second chapter an introductory preface, Moses proceeds with the history of the creation of *our Adam*, as received by inspiration, and of Eve, as handed down from Adam by tradition. He (Moses) takes no further notice of the creation of mankind, "*male and female*," mentioned in the first chapter, nor does he say whether only one pair or hundreds were made during the long continuance of the sixth day, nor that race after race of different kinds of animals were placed upon the earth in succession during the lapse of many ages. These circumstances were left for the then future to disclose. Thenceforward the Prophet applied himself to the one great object of his writings, "which was not to gratify man's appetite for merely intellectual information, but to be profitable for doctrine," &c. He proceeded to give the history of the *particular Adam* and of

Eve, and their descendants, the endowment and life of the soul, the probation and fall, or spiritual death, the promise of restoration, &c. That history was continued in Holy Writ until nearly the time of our Saviour, and from thence forms part of the general history of mankind. As much confusion has arisen from the confounding of the first and second chapters together, and treating them as if each purported to give an account of the creation of only one and the same human being, so also has great ingenuity been employed in the endeavour to reconcile the two statements.

An able and learned bishop quotes Dr. Kalish, whom he represents as having been one of the most able commentators on the Hebrew texts of Genesis, one, who did his utmost to maintain the general historical veracity of the Mosaic narrative, yet to have entertained doubts and encountered difficulties from those *imagined* discrepancies. Dr. Kalish states them in words following—"The creation was finished. We might imagine we see the blooming meadows, the finny tribes of the sea, and the numberless beasts of the field; in the midst of all this beauty and life, man with his helpmate as princes and sovereigns. But more! The creation was not only finished; it had been approved of in all its parts; and as the symbol of perfect completion of his task, God was represented to rest, and to bless that day which marked the conclusion of His labours. But now the narrative seems not only to pause, but to go

backwards; the grand and powerful climax seems at once broken off, and a languid repetition appears to follow. Another cosmogony is introduced, which (to complete the perplexity) is in many important features *in direct contradiction* to the former. It would be dishonesty to conceal these difficulties, it would be weak-mindedness and cowardice; it would be flight instead of combat; it would be an ignoble retreat instead of victory. We confess there is an *apparent* dissonance."

Assisted by this expression of doubt and perplexity acknowledged by an eminent man, anxious to maintain the truth of the Mosaic narrative so far as he consistently could, Bishop Colenso proceeds to state what he considers *the most noticeable points of difference between the two cosmogonies.*

Before entering on some of the several points of *supposed* difference as referred to by the Bishop, it will be necessary again to recur to the nature and origin of those two chapters, and to impress upon our minds the reason why they differ from each other, and to satisfy ourselves whether they relate to one cosmogony, or whether Moses intended thereby to describe distinct creations of man, occurring at several periods during the continuance of the thousands of years of the sixth of the Mosaic days.*

* The division of the Old Testament into chapters and verses is of comparatively modern date, perhaps not more than about six hundred years ago; but this does not invalidate the writer's argument.

The first chapter ends the revelation, and contains a succinct account of what the Almighty thought right to disclose to man. The first three verses of the second chapter are merely a winding-up and closing of the first. Until then the Almighty is named as *Elohim;* but in the fourth verse of the second chapter (which should be properly its commencement) the Almighty is called Jehovah Elohim, or the Lord God. On account of this difference between the titles God, and the Lord God, some have come to the conclusion that the first and second chapters were the production of different writers. We must remember that these two chapters may have been written under different circumstances; the one probably from day to day, as Moses received the revelations by visions; the other may have been written by him long after, and when he had collected and transcribed the traditions of the Israelites respecting Adam, and in which traditions he had found the word Jehovah in use. When the account of the revelation is finished and closed, Moses makes (apparently as from himself) an observation that "these are the generations of the heavens and the earth, when they were created, *in the day* that the *Lord God* made the earth and the heavens." This observation does not appear to be part of the revelation that had been wound up and closed in the third verse. Moses then recurs back to the beginning of the *third day* of *the*

creation—to a time when there was neither plant nor herb on the face of the earth, and before there was a man to till the ground—a time before the rays of the sun had penetrated through the dense mass of fog, and mist, and steaming gases, by which the earth was enveloped—a time before the clouds were gathered together, and before there could have been any rain—a time when, from the internal heat of the earth, and from its boiling seething mass, a heated vapoury mist arose, and kept the whole surface in a state of warm steamy moisture; then were the plants of a soft and watery nature committed to the ground. The gigantic fern, and other *cryptogamic* plants, the sigillaria, lepidodendra, and calamites; these could only flourish to luxuriant perfection in an atmosphere highly charged with aqueous vapour; such an atmosphere must have been *warm*, as these plants sprang forth with a luxuriance and rapidity of growth far surpassing those of the most fertile tropical parts of the earth at the present day. It is reasonable to infer that the revelation contained in the first chapter, must have been made by the Almighty. If Moses had not also written the second chapter, who could have informed us that there was a time before the plants were in the earth—a time at which there was no rain—who could have told us of the mist rising up from the earth and watering the ground? Moses probably beheld the earth in that peculiar

state in his vision of the third day, as suggested; and although he had omitted to mention it in the first chapter, no other person could have given an account of it, nor could he himself, had it not been revealed to him. In that first chapter he detailed the event of the creation of mankind in general on the sixth day as revealed to him; he did not state that the creation was confined to one pair. The mankind are called simply "*them.*" There is nothing in the revelation, as contained in the first chapter, inconsistent with the creation of several races of mankind, (suited to the varieties of soil and climate,) during the continuance of the *millions* of years of the sixth day. Numerous races of animals were from time to time created during that day, as we find from their fossil remains; and may there not equally have been numerous races of man? Their fossil implements, found in the tills and drifts of different epochs, and scattered over many countries, would prove this fact.

"*Male and female created He them;*" but how many were there created does not appear, any more than the number and varieties of fish of the fifth day, or the numbers of beasts of the sixth day. On the close of the revelation, Moses takes up in the second chapter the tradition of the Adamites, (whether altogether collected from oral or partly from previously written accounts, cannot now be ascertained.) *The special* or *particular Adamites* were interested in preserving an account

of their own first parents, and that account in the second chapter (whether written or compiled by Moses) gives the then accepted history of the creation of the first ancestors of the Jewish race. The revealed account was of the creation of mankind generally, the second chapter, given partly from inspiration, partly from tradition, contains the account merely of the creation of Adam and Eve.

The differences between the two creations are pointed out by Colenso, who detects discrepancies between (as he thinks) two different accounts of the same transaction, instead of investigating them as the detail, first, of a general creation of mankind, and next, that of a fuller account of a particular race, made distinct from all the others by the Almighty, for a particular purpose. Where Colenso fancies he finds contradictions existing between the two chapters condemnatory of the historical veracity of the narrative, others deem them confirmatory of the Mosaic revelations in a remarkable manner.

FIRST DISCREPANCY.

The bishop points out what he calls the most notable points of difference between the two cosmogonies, viz., Gen. i. 9, 10—"The earth emerges from the waters, and is *therefore* saturated with moisture." Gen. ii. 6—"The whole surface of the ground required to be *moistened*." That the whole surface of the earth required to be watered is an assump-

tion. Moses does not so declare, but only announces the fact of the mist arising and watering the earth; yet, it was necessary it should be so watered during the thousands of years comprised in the third day, otherwise those enormous masses of soft succulent plants crowded on the then surface of the earth could not have been forced into constant rapid growth and decay, and have formed piles and masses of vegetable matter of such magnitude as to have produced the vast coal fields of the earth. Strata after strata, prepared, through the wise, benevolent foresight of the Almighty, millions of years before the appearance of the human race, intended to furnish warmth, light, heat, and motive power, and to minister to the many and various necessities of man.

When Bishop Colenso objects, that on account of its recent emergence from the sea the earth did not require to be watered, his objection might have been tolerable, if the third day had been one of only twenty-four hours' duration. We have already stated what the geologists say to the formation of coal, in the description of the growth and production of coal in the third Mosaic day. Had the time of the formation of coal to have been only six thousand, instead of six millions of years, we can see how the earth required to be watered on the third day. We may dismiss this first discrepancy without farther comment.

SECOND DISCREPANCY.

Gen. i. 20, 24, 26—"Birds and beasts are created before man." Gen. ii. 7, 9—"Man is created before the birds and beasts." Geological investigation, as before stated, has shown that there were several successive creations of birds and beasts, according as the earth was prepared for their reception, and that they were successively adapted to the then state of mundane circumstances. Some of the birds ("winged fowl," but differing totally from those of the sixth day) were of the creations of the fifth day. The mammalia were of the sixth day. In the Eocene formation of the sixth day, Cuvier discovered the remains of fifty species of mammalia, and since his time numerous others have been found; these passed away. In the Miocene other races appear; they became extinct. The Pliocene furnishes remains of other classes of animals. The post-Pliocene produces more; and yet Moses only announces, simply and shortly, the fact of the creation of animals, afterwards of man; *but he also distinctly alludes to different creations of man*, as well as of beasts. Millions of years must have intervened between the appearance of the first and the last of these different races of mammalia; yet possibly, or probably, examples or instances of each or of all these may have been seen by Moses in a vision of a few hours' duration. Some marsupials appear to have been made on the fifth day, but not so

numerous as to have been prominent in the vision of that day. The Palæothers, the Glyptodons, and many others of the Eocene, lived and multiplied and passed away. They were succeeded by the creations of the Miocene, when Dinothers, and other large animals, cumbered the earth for their time, and then were seen no more. The Mastodons, the Mammoths and Megatheria, came on the earth during the Pliocene and post-Pliocene periods; they also, in their turn, became extinct. The Mammoth and early man were cotemporaries, as proved by the animal remains and artificial weapons being found mingled together.

Then comes a new race of man—a new creation distinctly announced, and more fully described in the second chapter of Genesis. Inasmuch as the beasts created before our Adam, in the first chapter, were *beasts of the earth*—wild beasts; those created after Adam were created for him, and were tame beasts (beasts of the field;) so far the fancied discrepancies vanish. It is to be hoped that in the pending revision of the Scriptures, there may be given an exact verbal and literal rendering of the Hebrew text; this would have the effect of clearing away many difficulties, such as, where Joshua is said to command the sun and moon to stand still. In the original, the words used are Shemesh, (the light of the sun,) and Yorxiakh, (the light of the moon,) as stated in a work by Aaron Pick, himself a learned Jew, a professor of

Hebrew and Chaldee in the university of Prague. This remarkable effect may have been produced by refraction or reflection;—a miracle still, but yet no more a violation of the laws of the Almighty than other phenomena produced by peculiar states of the atmosphere, such as the mirage, the aurora borealis, the parhelia or mock sun, the fata morgana, the spectre of the brocken, or that which appeared to the children of Israel in the wilderness, as a cloud by day, and a pillar of fire by night.*

Pick contending for the absolute necessity of a thorough knowledge of the Hebrew language, in order to translate and understand the Old Testament, speaks of shades and niceties of forms of expression in that language, which are not in the English tongue; as one instance he gives the use of the word *man*. He writes, that in Hebrew there are four states or degrees of *man*—all different in their signification—two of these are important for our present purpose.

In the second verse of the thirtieth chapter of Proverbs, where Agur is humbling himself and deploring his own state of ignorance, he is made to say in our version, "Surely I am more brutish than *any man*, and have not the understanding of a *man*." Pick calls this a meaningless repetition, by which the whole sense and point are lost. In

* I am indebted to a friend for the observations on the prefixes, and for the translations from the Hebrew.

the original it is literally, "Surely I am more ignorant than an *Ish;* I have not even the understanding of an *Adam.*" Ish meaning here as elsewhere a *superior man.* Ish (or Eth. H. Adam) in Genesis is applied to *our Adam*, whilst Adam (without the prefix Eth. *H.*) is used in Scripture to designate man or mankind, as if denoting an inferior or savage race—viz., the Palæolithic and Neolithic man. In our present translation the prefix Eth. H., which is equivalent to the article "*the*," particular before Adam, and other niceties in prefixes, in points and distinguishing characters, are almost entirely overlooked, whereby the distinctions between the lastly-created man, the superior or more intelligent man, Eth. H. Adam, and of the earlier races, simply called Adam (mankind,) "male and female," are lost, and the former mixed up and ranked with the general run of man.

In the original of the second chapter, which contains a particular account of *the Adam of the garden*, he is called Eth. H. Adam (the particular Adam,) and H. Adam, (the Adam;) but in our version the prefix has not been translated. It is omitted, not only in the seventh verse, in which man is first mentioned, but in fifteen other verses in this chapter, in which are prefixes in the original; they are neglected in the translation, which is rendered simply Adam (or mankind.) The particles, prefixes, and points vary according to the

different meanings to be conveyed, yet they each and all in this chapter point to our ancestor, *Eth. H. Adam*, or the particular Adam. The Rev. I. L. Porter, in his work on the "Giant Cities of Bashan," alludes to the necessity for attending to these peculiarities and difficulties in translation of eastern languages, thus—"It is difficult for those who are ignorant of the peculiar structure of the Arabic language to understand its nature. A word is taken, and by changing its form, a series of distinct acts is described, each act being expressed by a different inflexion of the root. One word will thus occur six, eight, or ten times in a stanza, with the addition of a prefix, or suffix, or the insertion of an intermediate letter, or an alteration in a vowel point, and each change conveys a new and definite meaning."

THIRD DISCREPANCY.

"In the 1st chapter, 20th verse, all fowls that fly are made out of the waters. In the 2nd chapter, 19th verse, the fowls of the air are made out of the ground." Does not this distinctly indicate different creations. Geology proves that there was a creation of fowl of the fifth day; that those became extinct, and were replaced by others of the sixth day; these were of different formation, and made from a different substance; the original for the ground, from which those of the sixth day were made, here being *H. Adama*, or out of Adam's

ground. As with the Palæolithic and Neolithic creations of men came new races of animals—the Mammoth, the Cave Bear, Rhinoceros, Tichorhinus, and others of the extinct mammals; so with the coming of the Eth H. Adam more suitable fowl, and birds of the air, and beasts of the field, made out of H. Adama, or the ground of Adam's land, were introduced before the close of the sixth day, better adapted for the use of H. Adam and his more civilized descendants than were the sea fowl, or those which originated from the waters, and the wild animals of the earth (Eretz) made on the fifth day. Of these we have but few remains (but three and a-half per cent., as before mentioned.) The living types had been all swept away before the sixth day, leaving behind them little more than their footprints in the sands. One of such creations is mentioned in the second chapter to have been made in the interval between the creation of the Eth H. Adam and that of Eve; made out of the ground of Adam's land, and brought to *the Adam* to receive their names, were, most likely, such only as were fitted for domestication. The beasts created after Adam are called beasts of the field; those made before him are called cattle and beasts of the earth, or wild beasts.*

The gradual progression, in the course of mil-

* Vide four descriptions—wild cattle, tame cattle, beasts of the field, and beasts of the earth—in the previous pages.

lions of years, from lower to higher degrees of existences, each new creation distinct, or nearly so, from all previous, and each perfect of its kind, appears to have been the uniform course adopted by the Almighty, as exhibited in all His works, from the first appearance of life through the invertebrates and vertebrates, marsupials and mammals; through the negroes and other inferior races, and finally, at the close of the sixth Mosaic day, the creation of Eth H. Adam, the highest type of intellectual man.

There is no discrepancy in the two creations of fowl, as indicated by Bishop Colenso, but merely a distinction drawn between those created on the fifth day out of the waters, and the new races of those made upon the sixth day out of the H. Adama, or Adam's ground.

FOURTH DISCREPANCY.

"In the 1st, man is created in the image of God—i. 27. In the 2nd, man is made of the dust of the ground, and merely animated with the breath of life; and it is only after his eating the forbidden fruit that the Lord God said, Behold, the man has become as one of us to know good and evil—ii. 7; iii. 22." That the first creation of man or mankind—*the male and female*—were created in the image of God, that is, in the image which our Saviour was to take upon Himself, is plain. That the second creation, alluded to by Colenso, was

made of the dust of the ground, of the dust of the H. Adama, or Adam's land, is also plain. There is, however, much more in this creation than the Bishop would lead us to suppose. He says, that this second man was merely animated with the breath of life; but he omits to mention that God had breathed into him a living soul. The Bishop goes farther: he states that it was only after eating the forbidden fruit that Adam knew good and evil. That is true enough; Adam was innocent when created—was unaware there was such a thing as evil. When he disobeyed God's positive command he became evil; his eyes were opened, and he knew good from evil; he was no longer innocent, and thenceforward a new course of treatment became necessary for him—he had entered into another phase. The difference pointed out by Colenso himself between the first man, or mankind, and the second man made out of the dust of Adam's land, receiving from the Almighty the breath of life and the living soul, is of itself evidence of the several and distinct creations of man.

FIFTH DISCREPANCY.

"In the 1st chapter, 28th verse, man is made lord of the 'whole earth.' In the 2nd, 8th to 15th verses, he is merely placed 'in the Garden of Eden to dress it and keep it.'"

This difference is most important and remarkable. In the first *man*, (mankind,) *male and female*,

(Adam without the prefix,) were in the savage state, and were to have dominion over every living thing, and to subdue them. They were at liberty to roam over the whole earth, and to establish their dominion thereon. The special man of the second chapter was created a civilized being. He was to be from the commencement both pastoral and agricultural; (as stated in the more particular description of him in the 2nd chapter;) to have flocks and herds, domesticated animals and fowl; to settle down within circumscribed limits, and cultivate the earth. In this there is no discrepancy.

SIXTH DISCREPANCY.

"In the 1st chapter, man and woman were created together, as closing and completing the work of the whole creation, ... and thus created, they are blessed together—28th verse.

"In the 2nd, beasts and birds are created between man and woman."

"The man is made of the dust of the ground, is placed by himself in the garden, charged with a solemn command, and threatened with a curse if he breaks it. Then the beasts and the birds are made, and man gives names to them; lastly, the woman is made out of one of his ribs, but merely as a helpmate for man—7th, 8th, 15th, 22nd verses.

The Bishop in his sixth discrepancy has stated the course of the creation of man, according to his

own view, but not exactly correctly. He states that in the 1st chapter man and woman were created together (meaning Adam and Eve.) They were not created together; but, on the contrary, decidedly, distinctly, and in a most marked manner, were created separately. But *men and women*, male and female—that is, *mankind* generally of the Palœolithic and Neolithic implements—were created together, either in pairs or in numbers in their many creations.

The blessing in the 28th verse, which Colenso applies to Adam and Eve, was clearly not to them, but to mankind generally, to them as "*male and female.*" Colenso then states that in the second chapter beasts and birds are created between man and woman—that is, between Adam and Eve. That was so: Moses distinctly tells us so, and there was a very good reason for it. The birds and beasts on the earth (Eretz) were wild, and the people who had dominion over them were also wild. But a special creation was made for Adam of tame birds and beasts, made, *not out of the earth*, (Eretz,) but out of Adam's own ground, (the H. Adama,) out of the ground of the garden of Eden. Colenso then states that man is made out of the dust of the ground, is placed by himself in the garden—charged with a solemn command, threatened with a curse if he breaks it, and that lastly, the woman is made, but merely as a *helpmate* for man.

These are facts distinctly stated by Moses; and are not only consistent with the circumstance of several other creations of man before Adam, but are absolutely conclusive evidence of those different formations.

That there were other creations of man before Adam is confirmed by geological research as before stated. I have followed Bishop Colenso no farther into his very able and elaborate work than through his six discrepancies between the two cosmogonies. His other objections to the Pentateuch appeared too formidable for an insignificant person to attack, and for which I had neither time nor ability.

There must, in a work such as the Bible, coming to us through many languages, and some of them containing such subtile niceties of construction, several of which had been unused or forgotten for centuries—there must be many passages obscure, misunderstood and mistranslated; but with all these drawbacks, there yet remains to us amply sufficient for the enlightenment of man and the redemption of sinners.

CHAPTER XI.

THE nineteenth verse of the ninth chapter of Genesis has been frequently put forward as an unanswerable argument to prove that the whole earth was peopled after the flood solely by Shem, Ham, and Japheth, and their descendants—"And of them was the whole earth overspread." I have been informed that the words in the original have no such meaning. The literal rendering is—"And from these they scattered abroad on all the *earth*" (Eretz.) This amounts to no more than that their descendants scattered themselves over the earth, and did not confine themselves to one locality, as did the immediate descendants of Adam, who dwelt within the restricted boundary of *H. Adama*, or *Adam's land.*

We come after the deluge to the division of a portion of the lands of the earth by the sons of Javan—(grandsons of Japheth)—Gen. x. 5. By these were the isles of the *Gentiles* divided in their lands, "every one after his tongue, after their families, in their nations." Thus it appears there were at that time *Gentiles*—other people besides the descendants of Noah—that some of them had settled themselves in isles; that they had different

languages and speech of their own. May we not infer from this that these nations (then called Gentiles) had been driven out by the superior race, as has happened in every part of the earth where savage came in contact with more civilized people.

Having stated the most prominent allusions in the Mosaic history to other races on the earth besides those of our Adam, do we find facts on the earth's surface at present to support such theory?

Doctor Charles Pickering, an eminent member of the United States Exploring Expedition, whose principal object was an inquiry into the varieties of the human race, having spent some years in the investigation, and having, for that purpose, visited almost all the known countries on the face of the globe, writes, in page 2 of his work on the races of man, "I have seen in all eleven races of men; and though I am hardly prepared to fix a positive limit to their number, I confess, after having visited so many different parts of the globe, I am at a loss where to look for others."

In the enumeration of races, he observes, in page 3, "That the existence of races is a phenomenon *independent of climate.* All the physical races that occur in cold regions can be traced by continuity to the tropics; where, *moreover, we find other races in addition.*" He adds, "It seems quite impossible to trace the four African races to any part of Asia; on the other hand, it will be equally difficult to connect the Mongolian race with the African continent."

In page 315 he writes, "On the Egyptian monuments I was unable to detect a change in the races of the human family; neither does history afford evidence of the extinction of *one physical race of man*, or of the development of another previously unknown." In same page he writes, "There is, I conceive, no middle ground between the admission of eleven distinct species in the human family *and the reduction to one.*"

In page 34 of the "Analytical Synopsis," the opinion of Professor Agassiz is given—"If by the unity of races of man be meant nothing more than that all mankind were endowed with one common nature, intellectual and physical, derived from the Creator of all men—were all under the same moral government of the universe, and sustained similar relations to the Deity, I side with those who maintain the unity of races. It is quite a different question, whether the different races of men were descended from different stocks, and I regard this position as fully proved by *Divine* revelation. The Jewish history was the history not of divers races, but of a single race of mankind. But the existence of other races is often incidentally alluded to, and distinctly implied, if not absolutely asserted, in the Sacred Volume; that there were other races of men in co-existence with Adam and his son Cain, dwelling in the land of *Nod*, and among whom Cain married and built a city; that there was no common central origin for man, but an indefinite

number of separate creations from which the races of man have sprung."

The eleven races of man examined by Dr. Pickering were the Arabian, Abyssinian, Mongolian, Hottentot, Malay, Papuan, Negrillo, Indian, Ethiopian, Australian, and Negro (he does not mention American Indians.) Adam and Eve were of the Arabian. We have their descent, by tradition and history, from the days of Adam to the present time. None of the others have descended from Adam and Eve, or it would most likely have been mentioned in Holy Writ; neither is there any record of white parents having produced children which could be classed among Negroes, or any of the other ten races. If we agree with Dr. Pickering, "*that there is no middle ground between the admission of eleven distinct species of the human family, and the reduction to one;*" and if we have sufficient evidence to show that there was more than one creation of man, as well from geological facts as from Scripture; and if the creation of several races of man at different times, placed in different countries, be not only NOT in conflict with the Mosaic record, but absolutely supported by it, why should we hesitate in concluding that not only were ten of the eleven races of men created before our Adam, (H. Adam,) but also that there may have been many other races swept away in the lapse of ages, by infanticide, by famine, by wars, by fires, by earthquakes, by storms, by floods, by pestilence,

by wild beasts, and by many other calamities incident to man? Have not the Tasmanians, and some tribes of Australians, of American Indians, and of other races, perished within the memory of the living?

Savage races are constantly retreating before civilization, and wasting away before our eyes. If such be the case in the short space of a lifetime, how many tribes, and nations, and races may have perished since the appearance of man, in the many thousand years which have passed! Since the post-Pliocene times, all the Palæolithic races of Europe, and the northern parts of Asia, perished under the snow-cap of the great glacial epoch, but others may have survived in the torrid zone. There was nothing in the climate to have prevented several of the Neolithic races from surviving to this hour; and we have from geology evidence of their continued unbroken existence to the present time. The connection is traceable from their implements; the Neolithic glided into those of brass and bronze; the bronze into the iron; those into the steel; the kitchen middens into the Phalbauten, and those into the modern places of defence and granaries. Moses stated the result of his several glimpses, he seized upon and depicted the great leading features of each of the visions. In that of the fifth day the fish swarmed forth abundantly. He does not appear to have been struck with any particular prominent ap-

pearance in describing the creation of animal life in the early part of the sixth day. A break occurs in the vision when that day or cycle was about three quarters spent. The Prophet then announces the creation of man.

RESUME.—Geology places this event, so far as has hitherto been decisively discovered, in the Pliocene and post-Pliocene formations; there is slight evidence of its having occurred at an earlier period. The first indication of the appearance of man points to a struggle with the huge monsters of the time—the unwieldy Mammoth, the savage Cave Bear, the stealthy Hyæna, and others.

This is quite in conformity with the Divine command given to man (or mankind) of the first chapter—"*Replenish the earth*, and *subdue it; and have dominion over every living thing that moveth upon the earth.*" Look at the contrast between the man of the Pliocene, post-Pliocene, and the H. Adam, who was placed in a garden *to till it.* The early man was *savage*, and subdued all living creatures; the latter was pacific and mild, a tiller of the earth.

We find from geology the traces of the occupation and pursuits of the first man, in his rude warlike implements, and in those of the chase, lying in the midst of the bones of his powerful victims.

The lastly-created man of the second chapter is depicted as surrounded with domestic animals,

and in the peaceful occupation of giving them names. The races of man in the revelation of the first chapter of Genesis, twenty-sixth verse, were created *male and female*, placed in the midst of animals of huge proportions, of savage nature, and inhabiting a *harsh and wintry* climate. The Eth. H. Adam, or *the special man*, particularly described in the second chapter, is placed alone in a mild and genial atmosphere; thickly around him trees were growing, having rich and luscious fruits, of abundant varieties to please the eye and gratify the palate, but there "was no help *meet* found for him." This of itself would imply that there were other races of females, but not equal to Eth. H. Adam, or *meet* for him.

The first races of men were commanded to *be fruitful and multiply and replenish the earth.*

Adam (or H. Adam) and his sons were engaged in the peaceful occupations of agriculture and of tending their flocks. One of them driven from his home unites himself to a woman of another race in another land, (the land of Nod, or Nomadic people as the word signifies,) and builds a city. His descendants, being of a mixed race, become partly civilized, engage in the working in iron and brass, in the cultivation of music, and dwell in tents.

The history of the Eth. H. Adam, and of the Caucasian race, has been continued to us partly by tradition and partly through history.

They have always been, and still continue to be, white, but of the eleven races of man examined by Pickering, ten of them differ from the white race in colour, hair, complexion, in make, in habit, in ability, in customs, and in capacity.

On looking at the schedule of the newly-created in each of the several strata of the several days of creation, at the end of each day you will observe, as before mentioned, that creative agency was active and continuous through each of those *strata*, and down to the very last of the sixth day. Not only is there nothing to show that the creation of birds and beasts ceased upon the creation of man of the second chapter of Genesis, but there is sufficient to prove that it did not close, even with that of the *Adam*. There was an interval between the creation of the *Adam* and that of Eve, of what duration we know not; but according to Moses there was in that interval a farther creation of birds and beasts, and that these were made out of the ground of *Adam's land*, (H. Adama,) and were collected round *the Adam* to be named. These we may naturally conjecture were but few in number, and of a *domestic* kind. The words in the original mean tame cattle, in contradistinction to wild beasts, or beasts of the earth (Eretz.) That the birds of the sixth day were different from those of fifth, has been geologically proved. None of the race of birds of the secondary period passed into the tertiary. Those

of the fifth day were of the sea, and those of the sixth day, created for Adam, were made out of the land (H. Adama.)

That there were many and successive creations of beasts in the tertiary before the creation of man, is a geological fact there is no disputing. That there were also many creations of birds we may, from analogy, and from finding these now on the surface of the earth, admit. Moses does not say that after the creation of man that of animals ceased; on the contrary, he asserts the creation of birds and beasts in the interval between the creation of the Adam and that of Eve. There is nothing in geology to conflict with that statement. Sheep, for instance, may have been created during that time. Their remains have not been found in the kitchen middens, nor in the early Lake dwellings, yet they were amongst those animals possessed by *the special Adam.*

The conclusion to be drawn from these observations, and from those contained in the previous sections, is that the six days of the Hexaœmeron were six great cycles of the Almighty, embracing many millions of years, and that we are now in the *seventh* day or period.

That the first appearance of man upon the earth was (so far as has been discovered) in the Pliocene and post-Pliocene, (or probably at an earlier period,) contemporaneous with the mammoth and several other extinct animals of the Pliocene and post-Pliocene formations.

That there were *before* the creation of *the* Adam, several creations of man, *male and female*, and that of those creations, ten races besides those of the *Adam* survive to this day.

That instead of being the *first*, our Adam was the *last* created man. That after him, there was a creation of domestic animals, and after them came Eve, at the close of the sixth day.

That the course of creation was then closed, that the current time of the seventh day then commenced, and of that day nearly six thousand years have run.

That judging from analogy, many thousands of years have yet to be fulfilled before that seventh day come to a close, and the earthly career of man be fully accomplished.*

* It may be remarked that there is a winding-up or closing of each of the six days as stated by Moses, but no winding-up or close is given for the seventh day, from which it may be inferred, that we are still in the seventh day; also, as a scale given by him to measure the duration of the days of creation, he tells us that all the time that elapsed from the beginning of the earth to the time when God said, "Let there be light," &c., was one day. This would comprise the geological formations of the Laurentian.

THE END.

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